



LUT9U-11406

LUT9

LUMINESCENCE SENSORS

SICK
Sensor Intelligence.



Illustration may differ



Ordering information

| Type | part no. |
|-------------|----------|
| LUT9U-11406 | 1047051 |

Other models and accessories → www.sick.com/LUT9

Detailed technical data

Features

| | |
|-------------------------------|---|
| Housing design | Large |
| Dimensions (W x H x D) | 30.4 mm x 53 mm x 80 mm |
| Light source | LED, Ultraviolet light ¹⁾ |
| Light emission | Long side |
| Light spot size | 12 mm x 12 mm |
| Light spot direction | Vertical |
| Receiving filters | ≤ 420 nm ²⁾ |
| Wave length | 375 nm |
| Working range | 30 mm ... 110 mm |
| Sensing distance | 90 mm ³⁾ |
| Receiving range | 450 nm ... 750 nm |
| Adjustment | Teach-in button |
| Teach-in mode | Static 2-point teach-in with manual fine adjustment |
| Output function | Light switching ⁴⁾ |

¹⁾ Average service life: 100,000 h at T_U = +25 °C.

²⁾ Filter blocks shorter wavelengths to suppress background luminescence.

³⁾ From leading edge of lens.

⁴⁾ L/D switching via teach-in.

Electronics

| | |
|--|---|
| Supply voltage | 10 V DC ... 30 V DC ¹⁾ |
| Ripple | < 5 V _{pp} ²⁾ |
| Current consumption | < 100 mA ³⁾ |
| Switching frequency | 0.5 kHz ⁴⁾ 2.5 kHz 6.5 kHz Adjustable |
| Response time | 1 ms 200 µs 75 µs |
| Switching output | PNP NPN |
| Switching output (voltage) | PNP: HIGH = $U_V \leq 2 \text{ V}$ / LOW approx. 0 V NPN: HIGH = approx. U_V / LOW $\leq 2 \text{ V}$ |
| Switching mode | Light switching |
| Analog output | 0 mA ... 13 mA |
| Output current I_{max.} | 100 mA |
| Time delay | Switch-off delay, 0 ms / 10 ms / 20 ms, adjustable (0 ms = default) |
| Protection class | II ⁵⁾ |
| Circuit protection | U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression |
| Connection type | Plug, M12, 5-pin |

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⁾ Reference voltage DC 50 V.

Mechanics

| | |
|-------------------------|--------------|
| Housing material | Zinc diecast |
| Weight | 400 g |

Ambient data

| | |
|--------------------------------------|------------------------|
| Ambient operating temperature | -10 °C ... +55 °C |
| Ambient temperature, storage | -25 °C ... +75 °C |
| Shock load | According to IEC 60068 |
| Enclosure rating | IP67 |

Certificates

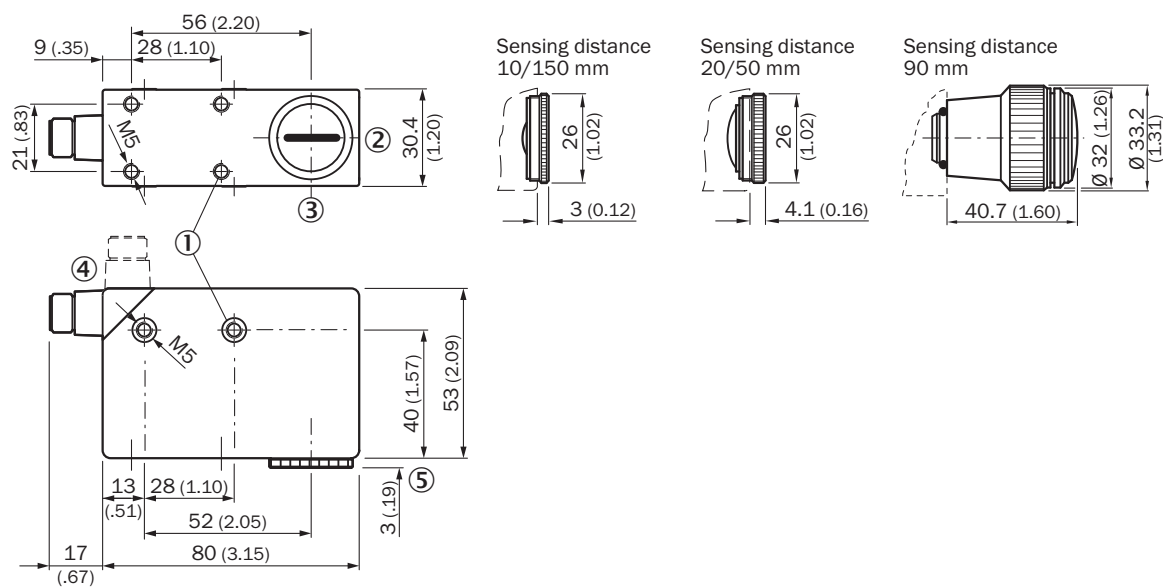
| | |
|---------------------------------------|---|
| EU declaration of conformity | ✓ |
| UK declaration of conformity | ✓ |
| ACMA declaration of conformity | ✓ |

| | |
|---------------------------------------|---|
| Moroccan declaration of conformity | ✓ |
| China RoHS | ✓ |
| Photobiological safety (IEC EN 62471) | ✓ |

Classifications

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

Dimensional drawing LUT9x-x1xxx, light Emission: Long side

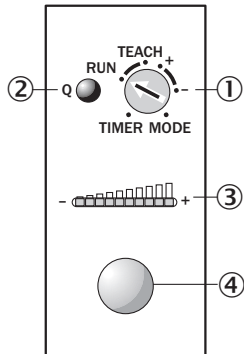


Dimensions in mm (inch)

- ① M5 threaded mounting hole, 5.5 mm deep
- ② Lens (light transmission), can be replaced by blind screw
- ③ Center of optical axis
- ④ Connector M12 (rotatable up to 90°)

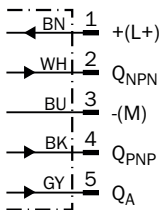
- ⑤ see dimensional drawings of lenses
- ⑥ Blind screw can be replaced by lens

Adjustments



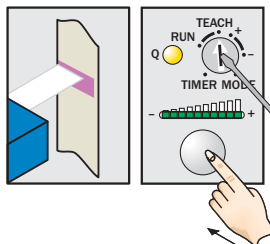
- ① Rotary selection switch
- ② Function signal indicator (yellow), switching output
- ③ bar graph (green), power-on left-hand LED
- ④ Teach-in button

Connection diagram Cd-312



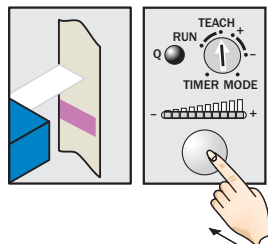
Concept of operation Teach-in static

1. Position mark



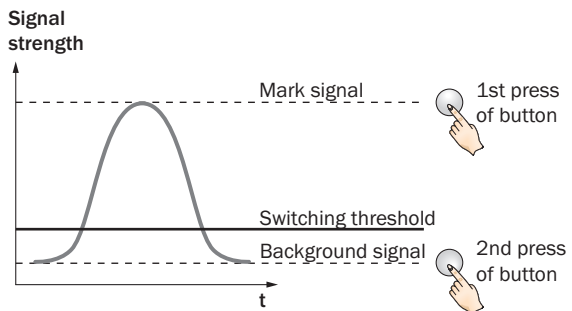
Turn rotary switch to "TEACH" position and press and hold teach-in button > 1 s. Yellow LED flashes slowly.

2. Position background



Press and hold teach-in button again > 1 s. Yellow LED goes out.

Sensitivity setting

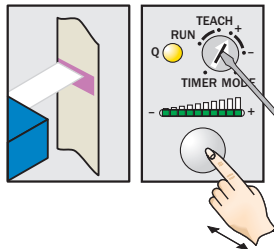


Note

The bar graph display shows detection reliability. The more LEDs that illuminate, the better the teach-in.

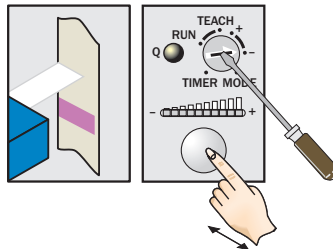
Concept of operation Button +/-

1. Position mark



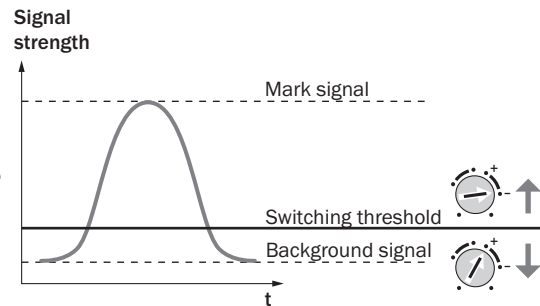
Turn rotary switch to “+” position and press and hold teach-in button until yellow light goes out (more green LEDs illuminate on the bar display).

2. Position background



If yellow LED illuminates, turn rotary switch to “-” position and press and hold teach-in button until yellow light just goes out (green LEDs go out on the bar display).

Sensitivity setting

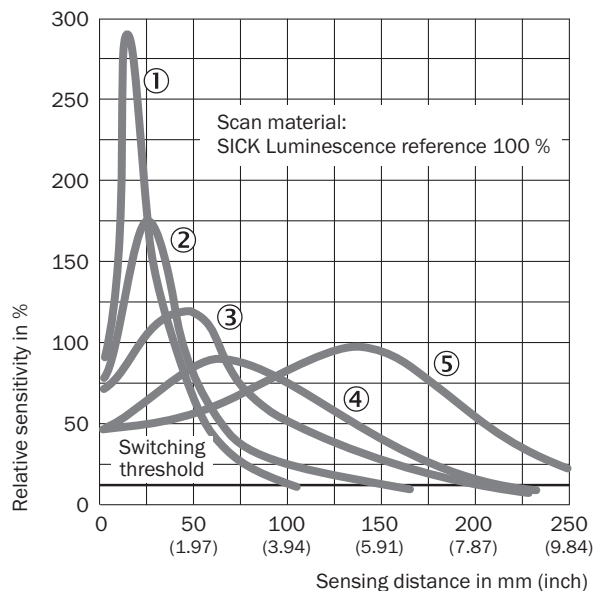


Note for all settings

Once configuration is complete, turn the rotary switch to the “RUN” position. The bar display then shows the luminescence intensity (regardless of switching threshold setting).

Adjustments are intended for luminescence background suppression.

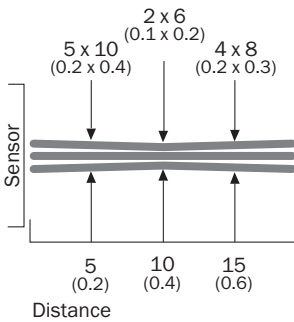
Sensing distance



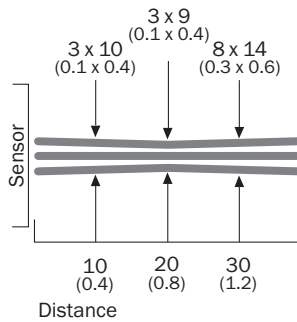
- ① Sensing distance 10 mm
- ② Sensing distance 20 mm
- ③ Sensing distance 50 mm
- ④ Sensing distance 90 mm
- ⑤ Sensing distance 150 mm

Light spot size

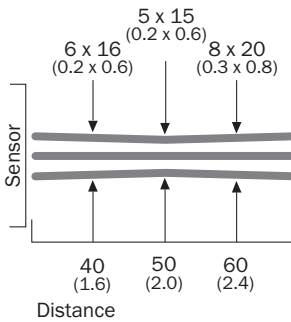
Sensing distance 10 mm



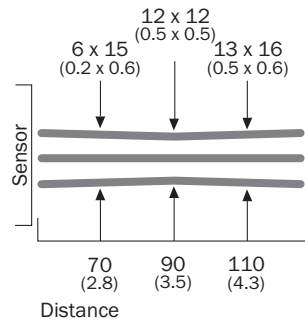
Sensing distance 20 mm



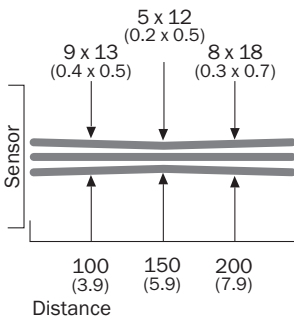
Sensing distance 50 mm



Sensing distance 90 mm





Sensing distance 150 mm



All dimensions in mm (inch)


Recommended accessories

Other models and accessories → www.sick.com/LUT9

| | Brief description | Type | part no. |
|---|---|-------------|----------|
| Mounting systems | | | |
|  | <ul style="list-style-type: none"> Description: Plate G for universal clamp bracket Material: Steel Details: Steel, zinc coated Items supplied: Universal clamp (2022726), mounting hardware Usable for: W34, LUT3, KT5-2, KT10, CS8, W24-2, KT8, KT8 | BEF-KHS-G01 | 2022464 |
|  | <ul style="list-style-type: none"> Description: Plate K for universal clamp bracket Material: Steel Details: Steel, zinc coated Items supplied: Universal clamp (2022726), mounting hardware Usable for: 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 | BEF-KHS-K01 | 2022718 |

| | Brief description | Type | part no. |
|-----------------------|---|-------------|----------|
| reflectors and optics | | | |
| | • Description: Lens, 10 mm sensing distance | OBJ-LUT3-10 | 2016348 |
| | • Description: Lens, 20 mm sensing distance | OBJ-LUT3-20 | 2016349 |
| | • Description: Lens, 50 mm sensing distance | OBJ-LUT3-50 | 2016350 |
| | • Description: Lens, 90 mm scanning distance | OBJ-026 | 1001326 |

| | Brief description | Type | part no. |
|---|--|--------------------|----------|
| connectors and cables | | | |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | DOS-1205-G | 6009719 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Description: Unshielded Connection systems: Screw-type terminals Permitted cross-section: ≤ 0.75 mm² | DOS-1205-W | 6009720 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YG2A15-020VB5XLEAX | 2096215 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YG2A15-050VB5XLEAX | 2096216 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YG2A15-100VB5XLEAX | 2096217 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 2 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YF2A15-020VB5XLEAX | 2096239 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 5 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YF2A15-050VB5XLEAX | 2096240 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, straight, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 10 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YF2A15-100VB5XLEAX | 2096241 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 0.6 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YG2A15-C60VB5XLEAX | 2145573 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 1 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded Application: Zones with chemicals, Uncontaminated zones | YG2A15-010VB5XLEAX | 2145574 |
|  | <ul style="list-style-type: none"> Connection type head A: Female connector, M12, 5-pin, angled, A-coded Connection type head B: Flying leads Signal type: Sensor/actuator cable Cable: 3 m, 5-wire, PVC Description: Sensor/actuator cable, unshielded | YG2A15-030VB5XLEAX | 2145575 |

| | Brief description | Type | part no. |
|---|---|--------------------|----------|
|  | <ul style="list-style-type: none">• Application: Zones with chemicals, Uncontaminated zones• Connection type head A: Female connector, M12, 5-pin, straight, A-coded• Connection type head B: Flying leads• Signal type: Sensor/actuator cable• Cable: 0.6 m, 5-wire, PVC• Description: Sensor/actuator cable, unshielded• Application: Zones with chemicals, Uncontaminated zones | YF2A15-C60VB5XLEAX | 2145570 |
| | <ul style="list-style-type: none">• Connection type head A: Female connector, M12, 5-pin, straight, A-coded• Connection type head B: Flying leads• Signal type: Sensor/actuator cable• Cable: 3 m, 5-wire, PVC• Description: Sensor/actuator cable, unshielded• Application: Zones with chemicals, Uncontaminated zones | 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.”

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