



LUT9U-11606

LUT9

LUMINESCENCE SENSORS

SICK
Sensor Intelligence.



Ordering information

Type	Part no.
LUT9U-11606	1047414

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



Detailed technical data

Features

Dimensions (W x H x D)	30.4 mm x 53 mm x 80 mm
Sensing distance	150 mm ¹⁾
Housing design (light emission)	Rectangular
Working range	50 mm ... 250 mm
Light source	LED, Ultraviolet light ²⁾
Wave length	375 nm
Light emission	Long side
Light spot size	5 mm x 12 mm
Light spot direction	Vertical
Receiving filters	KV 418 (standard)
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 ³⁾

¹⁾ From front edge of lens.

²⁾ Average service life: 100,000 h at T_J = +25 °C.

³⁾ L/D switching via teach-in.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC ¹⁾
Ripple	< 5 V _{pp} ²⁾

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

²⁾ May not exceed or fall below U_v tolerances.

³⁾ Without load.

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

⁵⁾ Signal transit time with resistive load.

⁶⁾ Reference voltage DC 50 V.

Current consumption	< 100 mA ³⁾
Switching frequency	0.5 kHz ⁴⁾ 2.5 kHz 6.5 kHz Adjustable
Response time	1 ms ⁵⁾ 200 µs 75 µs
Switching output	PNP, NPN
Switching output (voltage)	PNP: HIGH = $V_S - \leq 2 \text{ V}$ / LOW approx. 0 V NPN: HIGH = approx. V_S / 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)
Connection type	Male connector M12, 5-pin
Protection class	II ⁶⁾
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	400 g
Housing material	Metal, zinc diecast

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²⁾ May not exceed or fall below U_V tolerances.

³⁾ Without load.

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

⁵⁾ Signal transit time with resistive load.

⁶⁾ Reference voltage DC 50 V.

Communication interface

Communication interface	-
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Ambient data

Ambient operating temperature	-10 °C ... +55 °C
Ambient storage temperature	-25 °C ... +75 °C
Shock load	According to IEC 60068

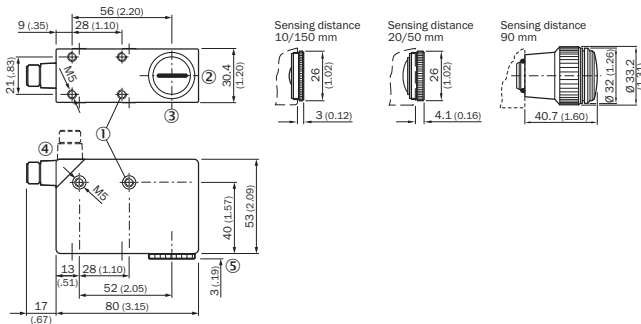
Classifications

ECl@ss 5.0	27270908
ECl@ss 5.1.4	27270908
ECl@ss 6.0	27270908
ECl@ss 6.2	27270908
ECl@ss 7.0	27270908
ECl@ss 8.0	27270908
ECl@ss 8.1	27270908
ECl@ss 9.0	27270908

ECl@ss 10.0	27270908
ECl@ss 11.0	27270908
ETIM 5.0	EC001822
ETIM 6.0	EC001822
ETIM 7.0	EC001822
UNSPSC 16.0901	39121528

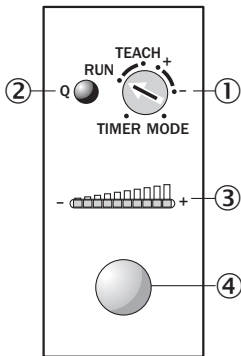
Dimensional drawing (Dimensions in mm (inch))

LUT9x-x1xxx, light Emission: Long side



- 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

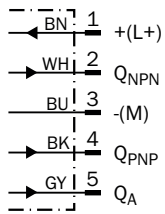
Adjustments



- 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

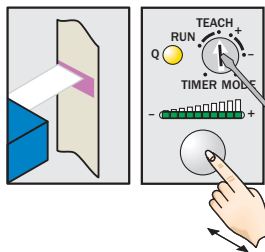
Cd-312



Concept of operation

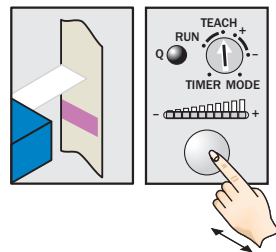
Teach-in static

1. Position mark



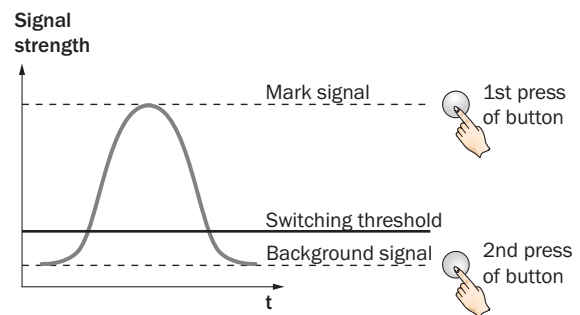
Turn rotary switch to "TEACH" position and press and hold teach-in button > 1 s. Yellow LED flashes slowly.

2. Position background



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

Sensitivity setting

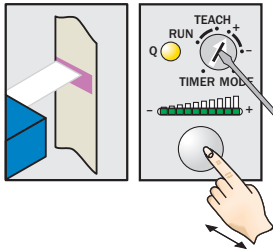


Note

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

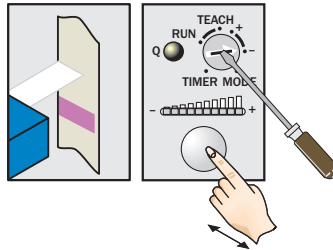
Button +/-

1. Position mark



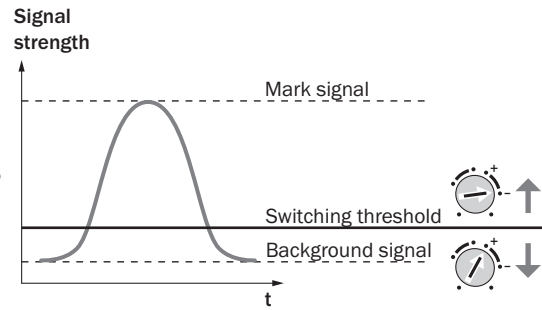
Turn rotary switch to “+” position and press and hold teach-in button until yellow light goes out (more green LEDs illuminate on the bar display).

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

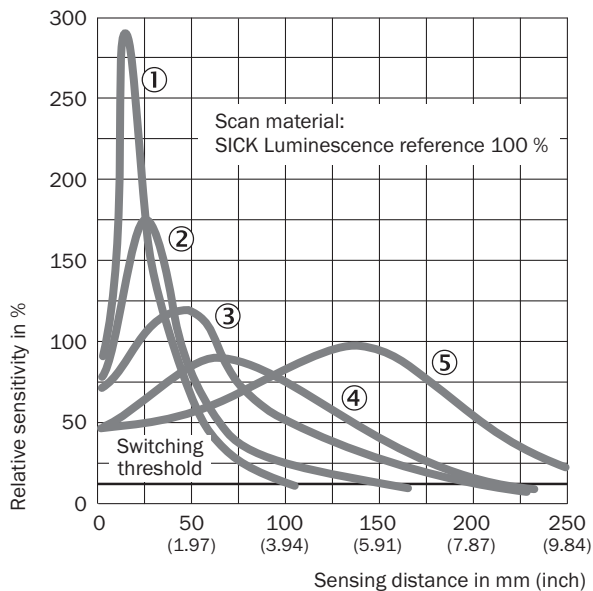


Note for all settings

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

Sensing distance

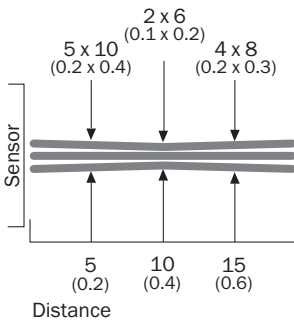


- ① Sensing distance 10 mm
- ② Sensing distance 20 mm
- ③ Sensing distance 50 mm
- ④ Sensing distance 90 mm
- ⑤ Sensing distance 150 mm

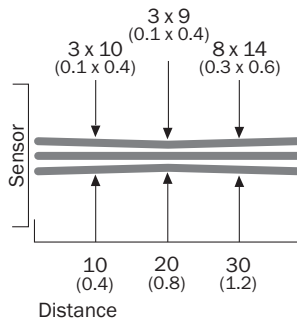
Light spot size

Light spot size

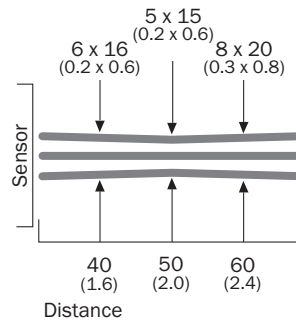
Sensing distance 10 mm



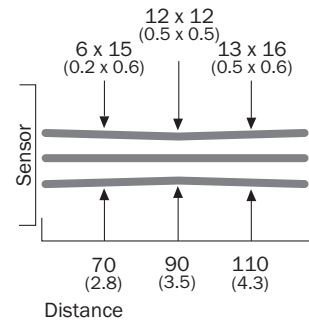
Sensing distance 20 mm



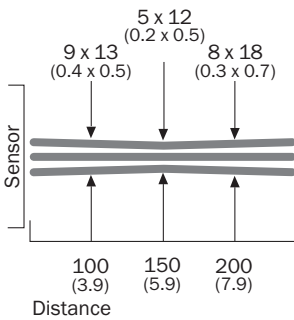
Sensing distance 50 mm



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.
Universal bar clamp systems			
	Plate G for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-G01	2022464
	Plate K for universal clamp bracket, steel, zinc coated, Universal clamp (2022726), mounting hardware	BEF-KHS-K01	2022718
	Universal clamp bracket for rod mounting, 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

	Brief description	Type	Part no.
	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
Plug connectors and cables			
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YF2A15-020VB5XLEAX	2096239
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A15-050VB5XLEAX	2096240
	Head A: female connector, M12, 5-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YF2A15-100VB5XLEAX	2096241
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 2 m	YG2A15-020VB5XLEAX	2096215
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YG2A15-050VB5XLEAX	2096216
	Head A: female connector, M12, 5-pin, angled, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 10 m	YG2A15-100VB5XLEAX	2096217
	Head A: female connector, M12, 5-pin, straight Cable: unshielded	DOS-1205-G	6009719
	Head A: female connector, M12, 5-pin, angled Head B: - Cable: unshielded	DOS-1205-W	6009720
Lenses and accessories			
		OBJ-026	1001326
		OBJ-LUT3-10	2016348
		OBJ-LUT3-20	2016349
		OBJ-LUT3-50	2016350

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