Data sheet

LUT9U-N130L

LUT9

LUMINESCENCE SENSORS

SICK
Sensor Intelligence.

Illustration may differ

Ordering information

Type	part no.
LUT9U-N130L	1046190

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	50 mm [1]
Housing design	Large
Working range	20 mm ... 70 mm
Light source	LED, UV [2]
Wave length	375 nm
Light emission	Long side
Light spot size	5 mm x 15 mm
Light spot direction	Vertical
Receiving filters	≤ 420 nm [3]
Receiving range	450 nm ... 750 nm
Adjustment	Teach-in button, IO-Link (optional)
Output function	Light switching [4]

[1] From leading edge of lens.
[2] Average service life: 100,000 h at T_U = +25 °C.
[3] Filter blocks shorter wavelengths to suppress background luminescence.
[4] L/D switching via teach-in or IO-Link.

Mechanics/electronics

Supply voltage	10 V DC ... 30 V DC [1]
Ripple	< 5 V_{pp} [2]
Current consumption	< 100 mA [3]

[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] Reference voltage DC 50 V.

Switching frequency	0.5 kHz, 2.5 kHz, 6.5 kHz [4] adjustable
Response time	1 ms, 200 µs, 75 µs [5]
Switching output	NPN
Switching output (voltage)	NPN: HIGH = approx. U_V / LOW ≤ 2 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, 4-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	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] Reference voltage DC 50 V.

Communication interface

IO-Link	✓, IO-Link V1.0
VendorID	26
DeviceID HEX	80000F
DeviceID DEC	8388623
Cycle time	2.3 ms
Process data structure	Bit 0 = switching signal Q_{L1} Bit 1 ... 5 = empty Bit 6 ... 15 = Analog Measurment Value

Ambient data

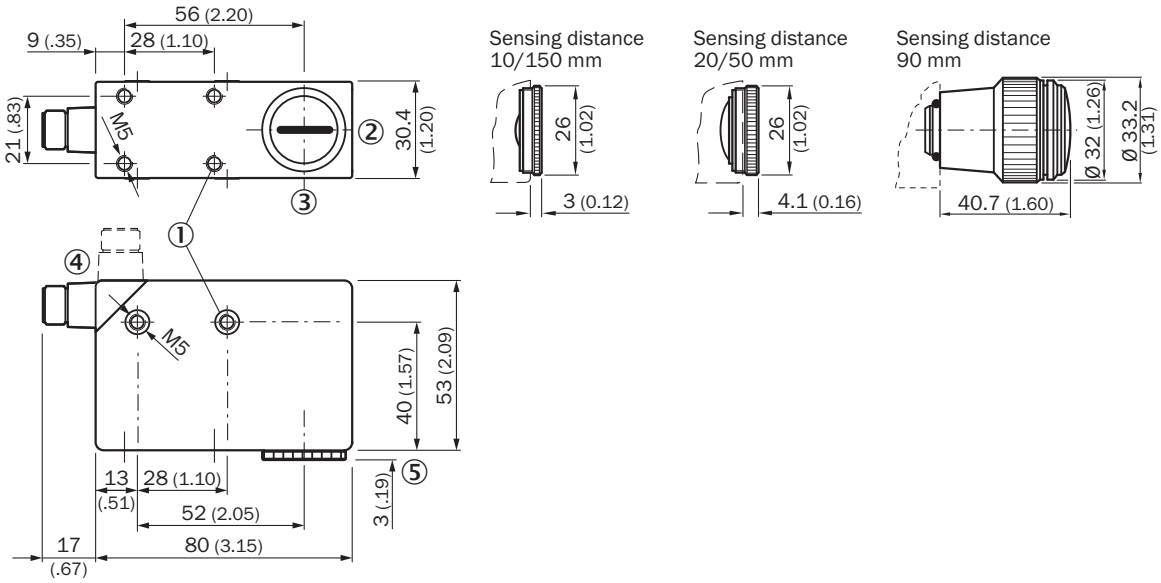
Ambient operating temperature	–10 °C ... +55 °C
Ambient temperature, storage	–25 °C ... +75 °C
Shock load	According to IEC 60068

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

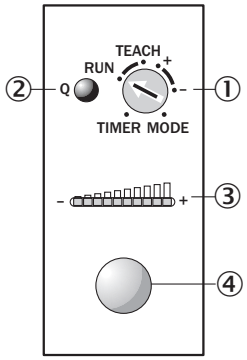
ECLASS 9.0	27270908
ECLASS 10.0	27270908
ECLASS 11.0	27270908
ECLASS 12.0	27270908
ETIM 5.0	EC001822
ETIM 6.0	EC001822
ETIM 7.0	EC001822
ETIM 8.0	EC001822
UNSPSC 16.0901	39121528

Dimensional drawing LUT9x-x1xxx, light Emission: Long side



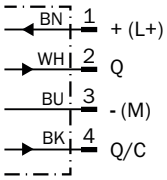
Dimensions in mm (inch)
① M5 threaded mounting hole, 5.5 mm deep
② Lens (light transmission), can be replaced by blind screw
③ Center of optical axis
④ Connector M12 (rotatable up to 90°)
⑤ see dimensional drawings of lenses
⑥ Blind screw can be replaced by lens

Adjustments



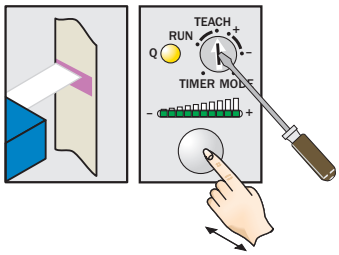
① Rotary selection switch
② Function signal indicator (yellow), switching output
③ bar graph (green), power-on left-hand LED
④ Teach-in button

Connection diagram Cd-309



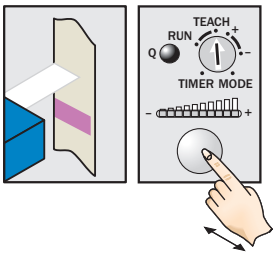
Concept of operation Teach-in static

1. Position mark



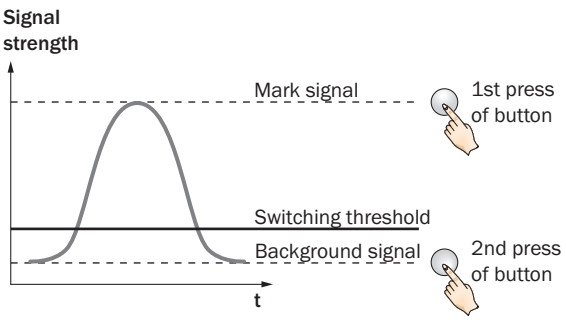
Turn rotary switch to “TEACH” position and press and hold teach-in button > 1 s.
Yellow LED flashes slowly.

2. Position background



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

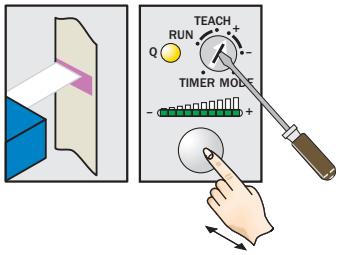
Sensitivity setting



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

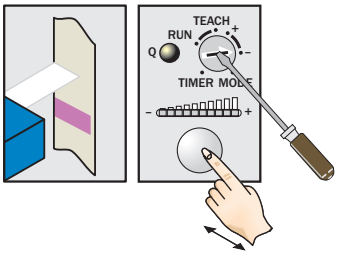
Concept of operation Button +/-

1. Position mark



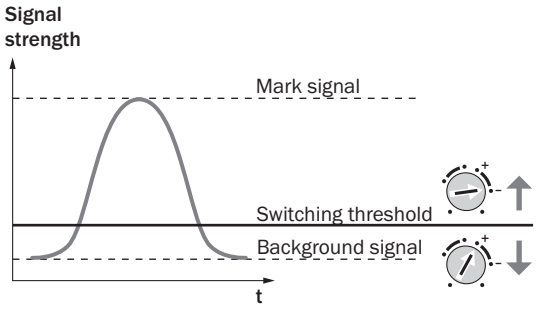
Turn rotary switch to “+” position and press and hold teach-in button until yellow light goes out (more green LEDs illuminate on the bar display).

2. Position background



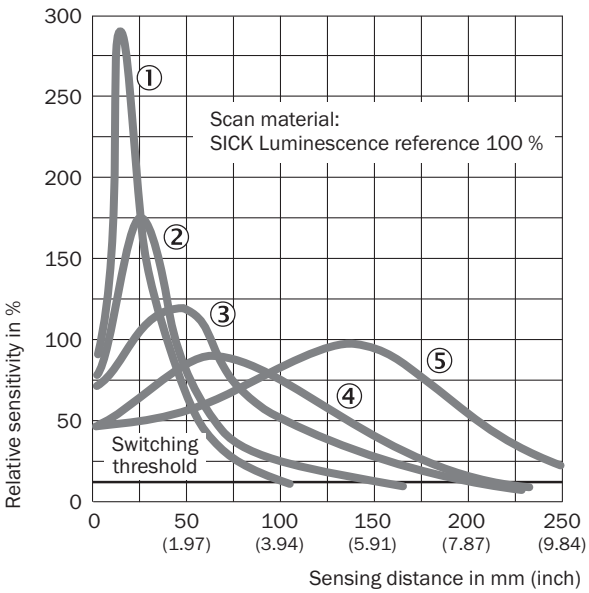
If yellow LED illuminates, turn rotary switch to “–” position and press and hold teach-in button until yellow light just goes out (green LEDs go out on the bar display).

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 intendend for luminescence background suppression.

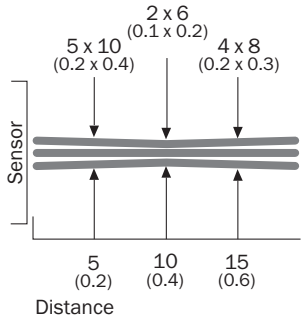
Sensing distance



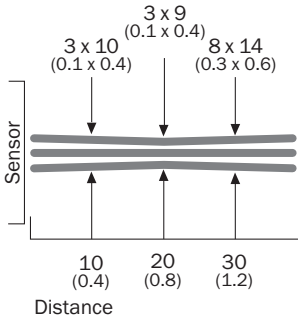
① Sensing distance 10 mm
② Sensing distance 20 mm
③ Sensing distance 50 mm
④ Sensing distance 90 mm
⑤ Sensing distance 150 mm

Light spot size

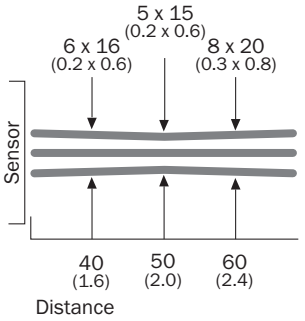
Sensing distance 10 mm



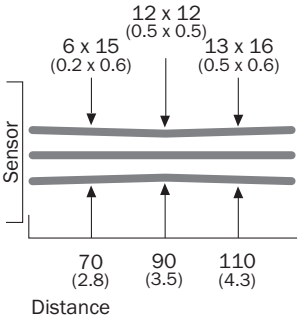
Sensing distance 20 mm



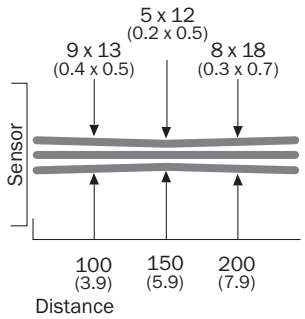
Sensing distance 50 mm



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			
	• **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
	• **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			
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	DOS-1204-G	6007302
	• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded • **Description:** Unshielded • **Connection systems:** Screw-type terminals • **Permitted cross-section:** ≤ 0.75 mm²	DOS-1204-W	6007303
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-020VB3XLEAX	2096234
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-050VB3XLEAX	2096235
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-100VB3XLEAX	2096236
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 15 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-150VB3XLEAX	2096237
	• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 2 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A14-020VB3XLEAX	2095895
	• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 5 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A14-050VB3XLEAX	2095897
	• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 10 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A14-100VB3XLEAX	2095898
	• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YG2A14-C60VB3XLEAX	2145709
	• **Connection type head A:** Female connector, M12, 4-pin, angled, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 1 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded	YG2A14-010VB3XLEAX	2145710

	Brief description	Type	part no.
	• **Application:** Zones with chemicals, Uncontaminated zones		
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 0.6 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-C60VB3XLEAX	2145707
	• **Connection type head A:** Female connector, M12, 4-pin, straight, A-coded • **Connection type head B:** Flying leads • **Signal type:** Sensor/actuator cable • **Cable:** 1 m, 4-wire, PVC • **Description:** Sensor/actuator cable, unshielded • **Application:** Zones with chemicals, Uncontaminated zones	YF2A14-010VB3XLEAX	2145708
network devices			
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605

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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