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DATA SHEET

LUT3-650

LUT3
Luminescence sensors

SICK
Sensor Intelligence



Illustration may differ

LUMINESCENCE SENSORS

LUT3-650

ORDERING INFORMATION

Type	part no.
LUT3-650	1015398

Further device versions and accessories at www.sick.com/LUT3

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	5 mm x 15 mm
Light spot direction	Vertical
Receiving filters	≤ 420 nm [2]
Wave length	375 nm
Working range	30 mm ... 60 mm
Sensing distance	≤ 50 mm [3]
Receiving range	450 nm ... 750 nm
Adjustment	Potentiometer
Output function	Light switching

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

[2] Filter blocks shorter wavelengths to blank out background luminescence.

[3] From leading edge of lens.

ELECTRONICS

Supply voltage	12 V DC ... 30 V DC [1]

[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.

[5] Reference voltage DC 50 V.

Ripple	< 2 V_{pp} [2]
Current consumption	< 60 mA [3]
Switching frequency	1.5 kHz [4]
Response time	350 µs
Switching output	PNP NPN
Switching output (voltage)	PNP: HIGH = V_S– ≤ 3 V / LOW = approx. 0 V NPN: HIGH = approx. U_V / LOW ≤ 2 V
Switching mode	Light switching
Output current $I_{max.}$	100 mA
Protection class	II [5]
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	Male connector M12, 4-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.

[5] Reference voltage DC 50 V.

MECHANICS

Housing material	Zinc diecast
Weight	400 g

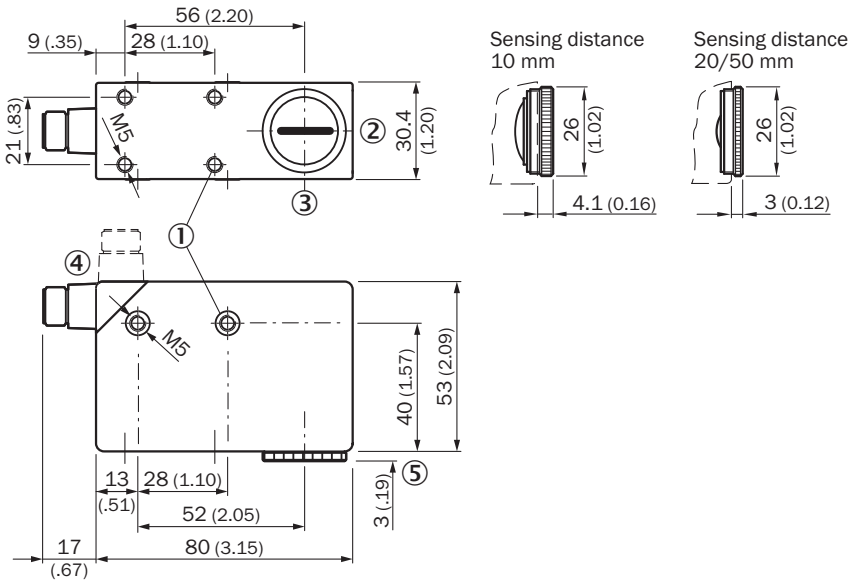
AMBIENT DATA

Ambient operating temperature	–10 °C ... +55 °C
Ambient temperature, storage	–25 °C ... +75 °C
Shock load	According to IEC 60068
Enclosure rating	IP67
UL File No.	NRKH.E181493 & NRKH7.E181493

CERTIFICATES

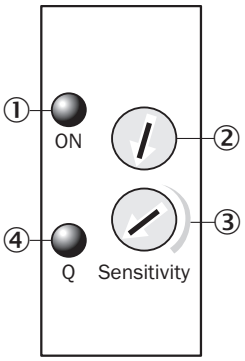
EU declaration of conformity	✓
UK declaration of conformity	✓
ACMA declaration of conformity	✓
Moroccan declaration of conformity	✓
China RoHS	✓
China Compulsory Product Certification (CCC) exempt	✓
cULus certificate	✓
Photobiological safety (IEC EN 62471)	✓

DIMENSIONAL DRAWING



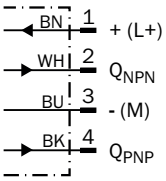
Dimensions in mm (inch)
① M5 threaded mounting hole, 5.5 mm deep
② Light spot direction
③ Center of optical axis
④ Connector M12 (rotatable up to 90°)
⑤ see dimensional drawings of lenses

ADJUSTMENTS



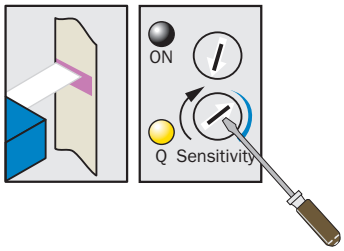
① Function signal indicator (green)
② Not assigned
③ sensitivity control
④ Function signal indicator (yellow), switching output

CONNECTION DIAGRAM CD-086



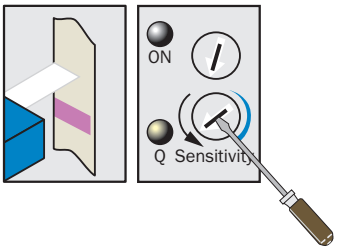
CONCEPT OF OPERATION POTENTIOMETER

1. Position mark



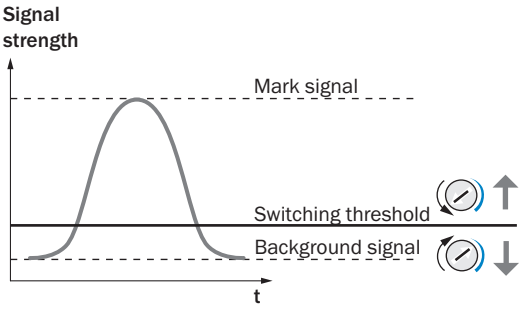
Turn “Sensitivity” rotary switch clockwise until yellow LED illuminates.

2. Position background



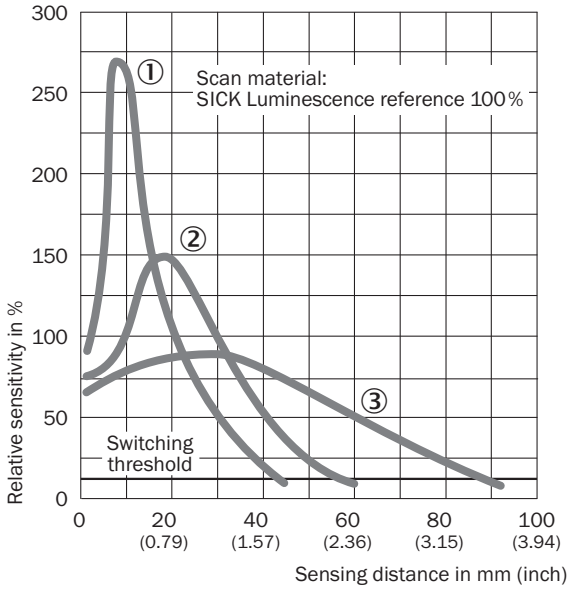
If yellow LED illuminates, turn “Sensitivity” rotary switch counter-clockwise until the yellow LED just goes out.

Sensitivity setting



Note
Adjustments are intendend for luminescence background suppression.

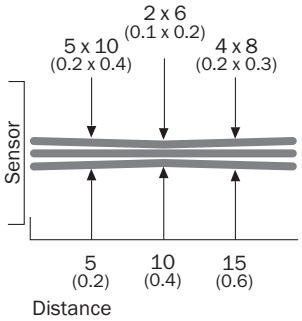
SENSING DISTANCE



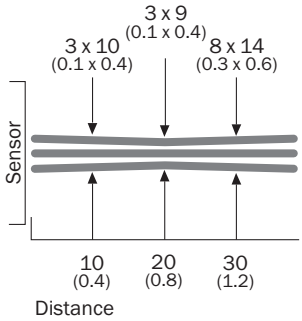
① Sensing distance 10 mm
② Sensing distance 20 mm
③ Sensing distance 50 mm

LIGHT SPOT SIZE

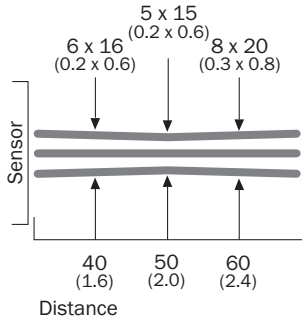
Sensing distance 10 mm



Sensing distance 20 mm



Sensing distance 50 mm



Further information as well as suitable accessories, example applications and downloads such as CAD dimensional models, operating instructions and software can be found at www.sick.com/1015398

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SICK AT A GLANCE

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SICK combines sensor intelligence with industry expertise and certified consulting services. We provide the ideal foundation for scalable as well as tailor-made automation solutions and create added value along the entire value chain. Our close partnerships with our customers are more than just a promise: Together, we optimize productivity, improve quality, protect health and safety, and help build a sustainable future. All with empathy and trust.

Since 1946, we have been developing innovative technologies with passion and a pioneering spirit. With a global network in around 40 countries, SICK has a global presence and is always close by. The company's headquarters are located in Waldkirch near Freiburg, Germany. Our customers benefit from our understanding of both local and global requirements, which enables us to deliver tailor-made solutions

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