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DATA SHEET

LUTS-BSF1F21142ZZZ

LUTS/LUTX
Luminescence sensors

SICK Sensor Intelligence



Illustration may differ

LUMINESCENCE SENSORS

LUTS-BSF1F21142ZZZ

ORDERING INFORMATION

Type	part no.
LUTS-BSF1F21142ZZZ	1144398

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

DETAILED TECHNICAL DATA

FEATURES

Housing design	Middle
Dimensions (W x H x D)	26 mm x 62 mm x 52.4 mm
Light source	LED, visible blue light [1]
Light emission	Long side
Light spot size	4.5 mm x 13.7 mm [2]
Light spot direction	Vertical [3]
Receiving filters	≤ 610 nm [4]
Wave length	460 nm
LED risk group marking	2
Working range	25 mm ... 100 mm
Sensing distance	50 mm
Adjustment	Teach-in button
Teach-in mode	Single value teach-in Two Value Teach-in
Scaling	0.5 / 1 / 2 / 4
Output function	Light switching [5] Dark switching
Switching threshold	Continuous: 1 ... 999

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

[2] Depends on the sensing distance.

[3] In relation to long side of housing.

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

[5] Factory setting.

INTERFACES

Digital output	Q_1, Q_2
Number	2

ELECTRONICS

Supply voltage	10.8 V DC ... 30 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	< 110 mA [3]
Power consumption	< 1.2 W
Switching frequency	16 kHz / 8 kHz / 2.5 kHz / 0.5 kHz / 0.25 kHz / adjustable (IO-Link)
Response time	31 µs / 62 µs / 200 µs / 1,000 µs / 2,000 µs / adjustable (display)
Jitter	15 µs / 31 µs / 100 µs / 500 µs / 1,000 µs
Switching output	PNP, NPN
Switching output (voltage)	PNP: HIGH = V_S - 3 V / LOW = 0 V, NPN: HIGH = V_S / LOW ≤ 3 V
Output current $I_{max.}$	100 mA [4]
Time delay	Switch-off delay, 0 ms ... 999 ms
Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Connection type	Male connector M12, 4-pin
Pinouts for Supply voltage & I/O	
BN 1	+ (L+)
WH 2	Q_{NPN}
BU 3	- (M)
BK 4	Q_{PNP}

[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] Total current of all Outputs.

MECHANICS

Housing material	VISTAL®
Optics material	Glass
Weight	Approx. 68 g

AMBIENT DATA

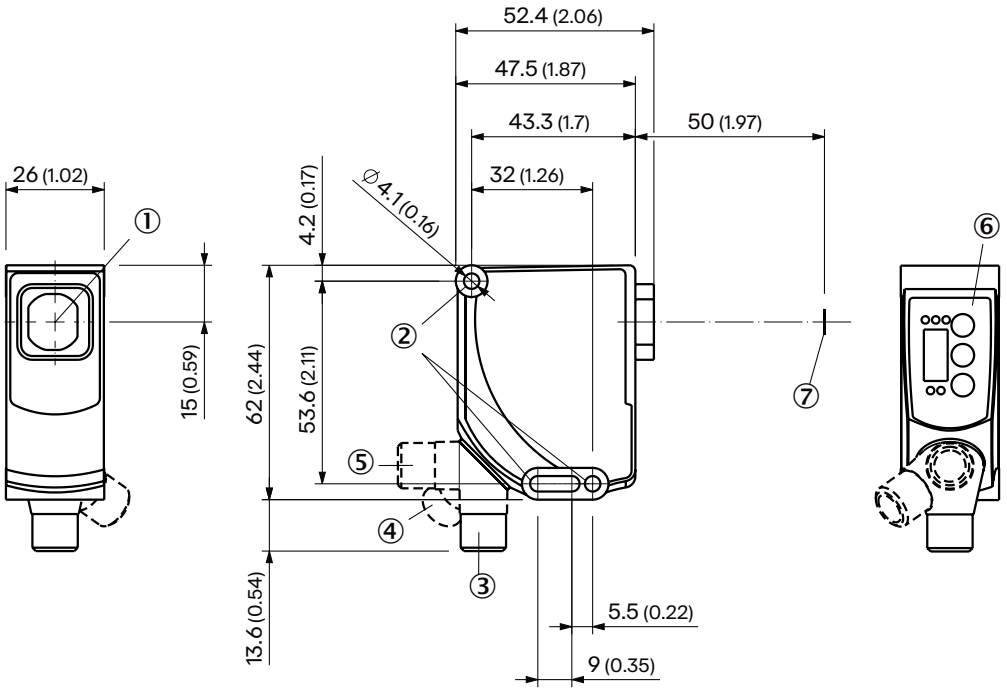
Ambient operating temperature	–20 °C ... +60 °C
Ambient temperature, storage	–25 °C ... +75 °C
Shock load	According to IEC 60068-2-27 (30 g/11 ms)
Enclosure rating	IP67
UL File No.	E181493

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	✓
Optical radiation safety (GB 44703:2024) declaration of manufacturer (medium risk)	✓

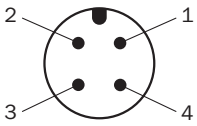
DIMENSIONAL DRAWING, SENSOR



Dimensions in mm (inch)
① Optical axis
② fixing hole
③ M12 male connector, delivery state
④ M12 male connector, end stop right
⑤ M12 male connector, end stop left
⑥ display and adjustment elements
⑦ light spot size at sensing distance 50 mm

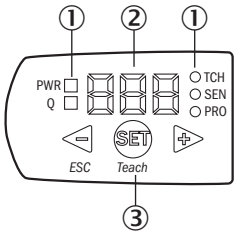
Light spot size (sensing distance)	
Device variant	Light spot size at sensing distance 50 mm
LUTx-**B**xx**1F**xxxxxxxx	4.5 mm x 13.7 mm
LUTx-**U**xx**1F**xxxxxxxx	5.1 mm x 15.6 mm
LUTx-**U**xx**4F**xxxxxxxx	Ø 7 mm
LUTx-**U**xx**AF**xxxxxxxx	Ø 15.1 mm

PINOUTS, SEE TABLE TECHNICAL DATA: ELECTRONICS



M12 male connector, 4-pin, A-coding

DISPLAY AND ADJUSTMENT ELEMENTS



① LEDs (status display)
② 7-segment display
③ Plus/minus button

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/1144398

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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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