



# LUTM-UN81162P

LUTM

LUMINESCENCE SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
LUTM-UN81162P	1067296

Other models and accessories → [www.sick.com/LUTM](http://www.sick.com/LUTM)



### Detailed technical data

#### Features

<b>Dimensions (W x H x D)</b>	12 mm x 31.5 mm x 21 mm
<b>Sensing distance</b>	12.5 mm <sup>1)</sup>
<b>Housing design (light emission)</b>	Rectangular
<b>Working range</b>	8 mm ... 20 mm
<b>Light source</b>	LED, Ultraviolet light <sup>2)</sup>
<b>Wave length</b>	370 nm
<b>Light emission</b>	Long side
<b>Light spot size</b>	2 mm x 2.5 mm <sup>3)</sup>
<b>Light spot direction</b>	Vertical
<b>Receiving range</b>	450 nm ... 750 nm
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	2-point teach-in static/dynamic
<b>Output function</b>	Light/dark switching <sup>4)</sup>

<sup>1)</sup> From front edge of lens.

<sup>2)</sup> Average service life: 100,000 h at T<sub>J</sub> = +25 °C.

<sup>3)</sup> At sensing distance.

<sup>4)</sup> L/D switching via teach-in.

#### Mechanics/electronics

<b>Supply voltage</b>	12 V DC ... 24 V DC <sup>1)</sup>
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<sup>1)</sup> Limit values: DC 12 V (-10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall below U<sub>v</sub> tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> At supply voltage > 24 V, I<sub>max</sub> = 30 mA. I<sub>max</sub> is consumption count of all Q<sub>N</sub>.

<b>Ripple</b>	$\leq 5 V_{pp}$ <sup>2)</sup>
<b>Current consumption</b>	$\leq 50 \text{ mA}$ <sup>3)</sup>
<b>Switching frequency</b>	6 kHz <sup>4)</sup>
<b>Response time</b>	80 $\mu\text{s}$ <sup>5)</sup>
<b>Jitter</b>	40 $\mu\text{s}$
<b>Switching output</b>	NPN
<b>Switching output (voltage)</b>	NPN: HIGH = approx. $V_S$ / LOW $\leq 2 \text{ V}$
<b>Switching mode</b>	Light/dark switching
<b>Output current <math>I_{max}</math></b>	$< 100 \text{ mA}$ <sup>6)</sup>
<b>Input, teach-in (ET)</b>	NPN Teach: $U < 2 \text{ V}$ Run: $U = 10 \text{ V} \dots < U_V$
<b>Connection type</b>	Cable with M12 male connector, 4-pin, 0.2 m
<b>Protection class</b>	III
<b>Circuit protection</b>	$U_V$ connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	70 g
<b>Housing material</b>	Plastic, ABS

<sup>1)</sup> Limit values: DC 12 V (-10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.

<sup>2)</sup> May not exceed or fall below  $U_V$  tolerances.

<sup>3)</sup> Without load.

<sup>4)</sup> With light/dark ratio 1:1.

<sup>5)</sup> Signal transit time with resistive load.

<sup>6)</sup> At supply voltage  $> 24 \text{ V}$ ,  $I_{max} = 30 \text{ mA}$ .  $I_{max}$  is consumption count of all  $Q_n$ .

## Communication interface

<b>Communication interface</b>	-
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## Ambient data

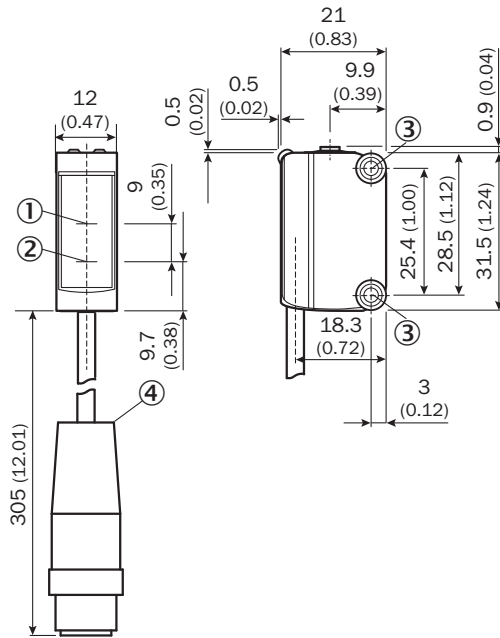
<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient storage temperature</b>	-20 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068
<b>UL File No.</b>	NRKH.E348498 & NRKH7.E348498

## Classifications

<b>ECl@ss 5.0</b>	27270908
<b>ECl@ss 5.1.4</b>	27270908
<b>ECl@ss 6.0</b>	27270908
<b>ECl@ss 6.2</b>	27270908
<b>ECl@ss 7.0</b>	27270908
<b>ECl@ss 8.0</b>	27270908
<b>ECl@ss 8.1</b>	27270908
<b>ECl@ss 9.0</b>	27270908
<b>ECl@ss 10.0</b>	27270908

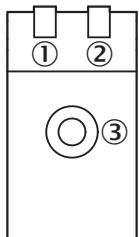
<b>ECI@ss 11.0</b>	27270908
<b>ETIM 5.0</b>	EC001822
<b>ETIM 6.0</b>	EC001822
<b>ETIM 7.0</b>	EC001822
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing (Dimensions in mm (inch))



- ① Optical axis, receiver
- ② Optical axis, sender
- ③ M3 mounting hole
- ④ Cable with male connector

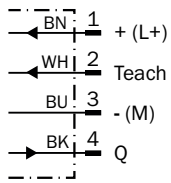
### Adjustments



- ① LED indicator, yellow: Status switching output Q
- ② LED indicator green: Supply voltage active
- ③ Teach-in button

## Connection diagram

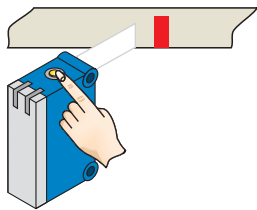
Cd-092



## Concept of operation

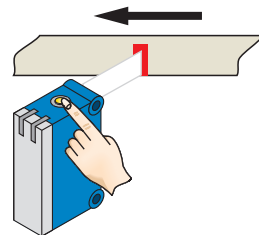
Setting the switching threshold (dynamic)

### 1. Position background

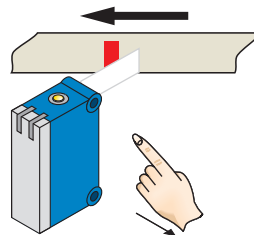


Press the teach-in button and keep it pressed. LED flashing slowly.

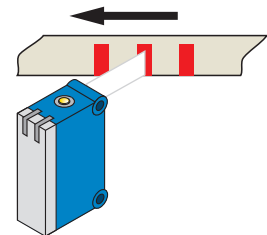
### 2. Move at least the fluorescent mark and background using the light spot.



Keep the teach-in button  $> 3 < 30$  s pressed.



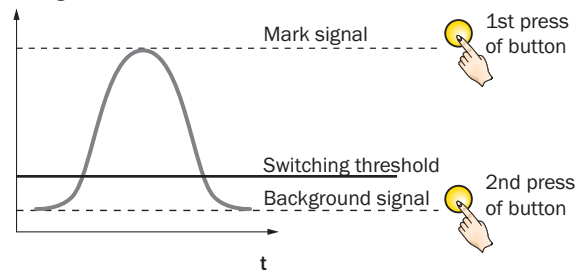
Release the teach-in button.



Yellow LED will illuminate, when emitted light is on the fluorescent mark.

## Sensitivity setting

Signal strength



## Switching characteristics

Static teach-in: light/dark setting is defined using teach-in sequence.

Dynamic teach-in: switching output active on fluorescent mark, if background is longer in the field of view during the teach-in. The switching threshold is set automatically between the background and the mark.

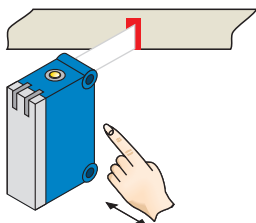
Teach-in can also be performed using an external control signal (only dynamic teach-in).

Keylock activation and deactivation: hold down teach-in button  $> 30$  s.

Teach-in failure: yellow LED indicator and the transmitted light of the sensor flashing quickly.  
For dynamic teach-in with ET signal (5 Hz) via switching output Q.

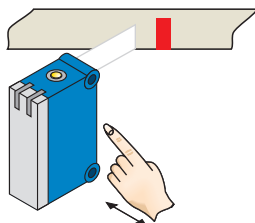
Setting the switching threshold (static)

**1. Position fluorescent mark**



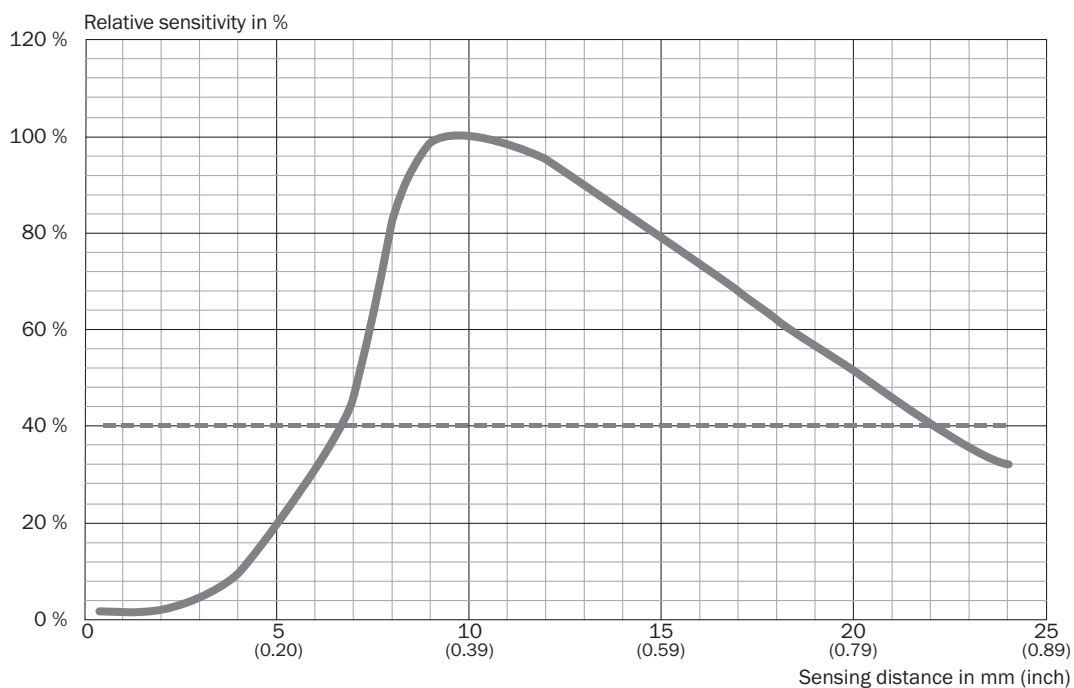
Press and hold teach-in button > 1 < 3 s.  
Yellow LED flashes slowly.

**2. Position background**



Press and hold teach-in button < 3 s.  
Yellow LED goes out.



**Sensing distance**



**Recommended accessories**

Other models and accessories → [www.sick.com/LUTM](http://www.sick.com/LUTM)

	Brief description	Type	Part no.
Mounting brackets and plates			
	Stainless steel (1.4301)	BEF-WN-G6	2062909

	<b>Brief description</b>	<b>Type</b>	<b>Part no.</b>
Plug connectors and cables			
	Head A: female connector, M12, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF2A14-050VB3XLEAX	2096235
	Head A: male connector, M12, 4-pin, straight Head B: - Cable: unshielded	STE-1204-G	6009932

## 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](http://www.sick.com)