



# LUT9U-11216

## LUT9

LUMINESCENCE SENSORS

**SICK**  
Sensor Intelligence.



## Ordering information

Type	part no.
LUT9U-11216	1082039

Other models and accessories → [www.sick.com/LUT9](http://www.sick.com/LUT9)

Illustration may differ



## Detailed technical data

### Features

<b>Dimensions (W x H x D)</b>	30.4 mm x 53 mm x 80 mm
<b>Sensing distance</b>	20 mm <sup>1)</sup>
<b>Housing design</b>	Large
<b>Working range</b>	10 mm ... 40 mm
<b>Light source</b>	LED, UV <sup>2)</sup>
<b>Wave length</b>	375 nm
<b>Light emission</b>	Long side
<b>Light spot size</b>	3 mm x 9 mm
<b>Light spot direction</b>	Vertical
<b>Receiving filters</b>	≤ 570 nm <sup>3)</sup>
<b>Receiving range</b>	570 nm ... 750 nm
<b>Adjustment</b>	Teach-in button
<b>Teach-in mode</b>	Static 2-point teach-in with manual fine adjustment
<b>Output function</b>	Light switching <sup>4)</sup>

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

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

<sup>3)</sup> Filter blocks shorter wavelengths to suppress background luminescence.

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

## Mechanics/electronics

<b>Supply voltage</b>	10 V DC ... 30 V DC <sup>1)</sup>
<b>Ripple</b>	< 5 V <sub>pp</sub> <sup>2)</sup>
<b>Current consumption</b>	< 100 mA <sup>3)</sup>
<b>Switching frequency</b>	0.5 kHz, 2.5 kHz, 6.5 kHz <sup>4)</sup> adjustable
<b>Response time</b>	1 ms, 200 µs, 75 µs <sup>5)</sup>
<b>Switching output</b>	PNP, NPN
<b>Switching output (voltage)</b>	PNP: HIGH = U <sub>V</sub> ≤ 2 V / LOW approx. 0 V NPN: HIGH = approx. U <sub>V</sub> / LOW ≤ 2 V
<b>Switching mode</b>	Light switching
<b>Analog output</b>	0 mA ... 13 mA
<b>Output current I<sub>max.</sub></b>	100 mA
<b>Time delay</b>	Switch-off delay, 0 ms / 10 ms / 20 ms, adjustable (0 ms = default)
<b>Connection type</b>	Male connector M12, 5-pin
<b>Protection class</b>	II <sup>6)</sup>
<b>Circuit protection</b>	U <sub>V</sub> connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
<b>Enclosure rating</b>	IP67
<b>Weight</b>	400 g
<b>Housing material</b>	Zinc diecast

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

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

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

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

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

<sup>6)</sup> Reference voltage DC 50 V.

## Ambient data

<b>Ambient operating temperature</b>	-10 °C ... +55 °C
<b>Ambient temperature, storage</b>	-25 °C ... +75 °C
<b>Shock load</b>	According to IEC 60068

## Certificates

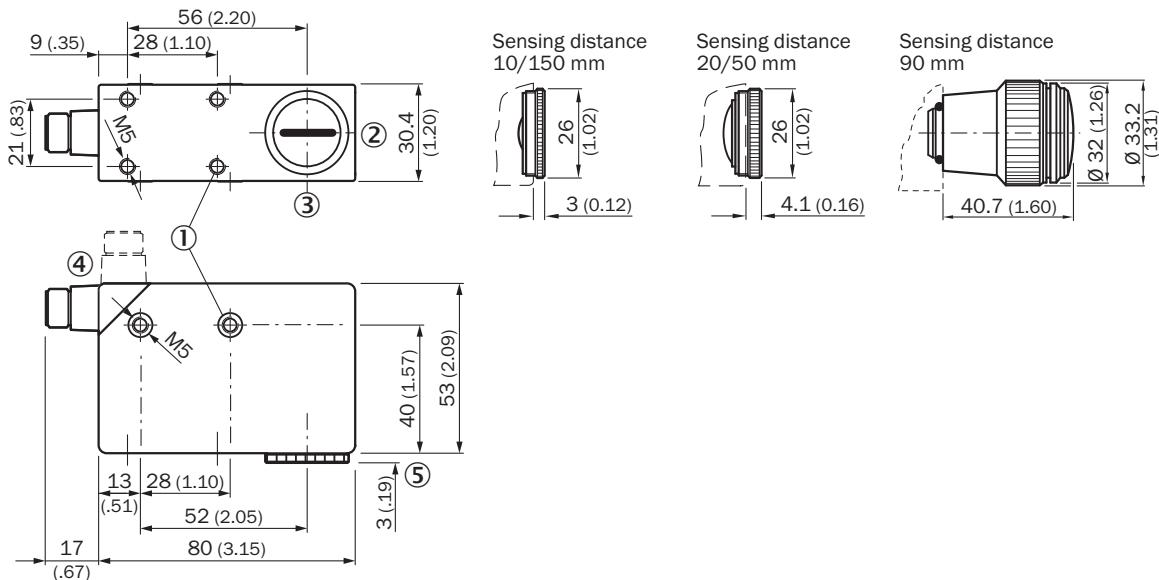
<b>EU declaration of conformity</b>	✓
<b>UK declaration of conformity</b>	✓
<b>ACMA declaration of conformity</b>	✓
<b>Moroccan declaration of conformity</b>	✓
<b>China-RoHS</b>	✓
<b>Photobiological safety (IEC EN 62471)</b>	✓

## Classifications

<b>ECLASS 5.0</b>	27270908
<b>ECLASS 5.1.4</b>	27270908
<b>ECLASS 6.0</b>	27270908

<b>ECLASS 6.2</b>	27270908
<b>ECLASS 7.0</b>	27270908
<b>ECLASS 8.0</b>	27270908
<b>ECLASS 8.1</b>	27270908
<b>ECLASS 9.0</b>	27270908
<b>ECLASS 10.0</b>	27270908
<b>ECLASS 11.0</b>	27270908
<b>ECLASS 12.0</b>	27270908
<b>ETIM 5.0</b>	EC001822
<b>ETIM 6.0</b>	EC001822
<b>ETIM 7.0</b>	EC001822
<b>ETIM 8.0</b>	EC001822
<b>UNSPSC 16.0901</b>	39121528

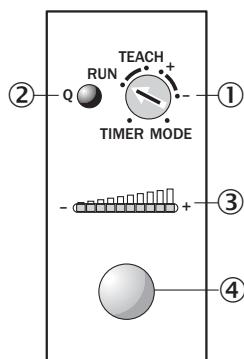
Dimensional drawing LUT9x-x1xxx, light Emission: Long side



Dimensions in mm (inch)

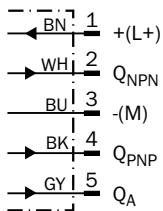
- ① M5 threaded mounting hole, 5.5 mm deep
- ② Lens (light transmission), can be replaced by blind screw
- ③ Center of optical axis
- ④ Connector M12 (rotatable up to 90°)
- ⑤ see dimensional drawings of lenses
- ⑥ Blind screw can be replaced by lens

## Adjustments



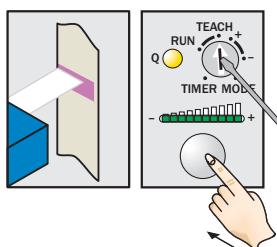
- ① Rotary selection switch
- ② Function signal indicator (yellow), switching output
- ③ bar graph (green), power-on left-hand LED
- ④ Teach-in button

## Connection diagram Cd-312



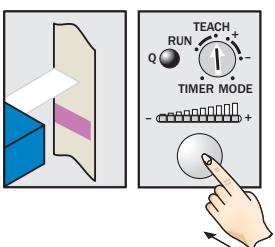
## Concept of operation Teach-in static

### 1. Position mark



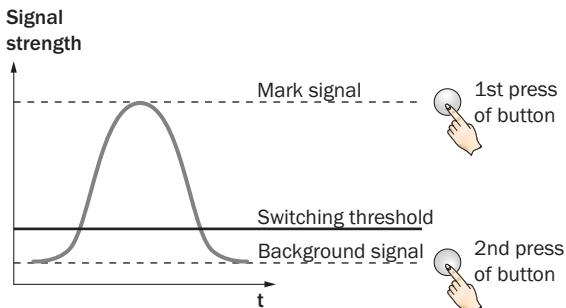
Turn rotary switch to "TEACH" position and press and hold teach-in button > 1 s. Yellow LED flashes slowly.

### 2. Position background



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

### Sensitivity setting

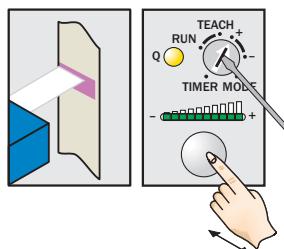


### Note

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

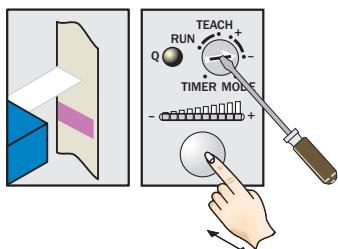
## Concept of operation Button +/-

### 1. Position mark



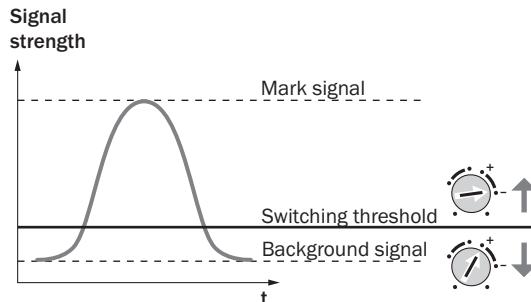
Turn rotary switch to "+" position and press and hold teach-in button until yellow light goes out (more green LEDs illuminate on the bar display).

### 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

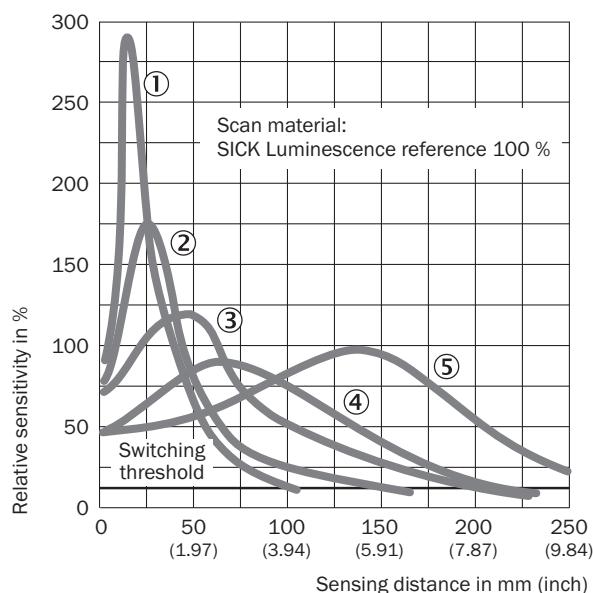


### Note for all settings

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).

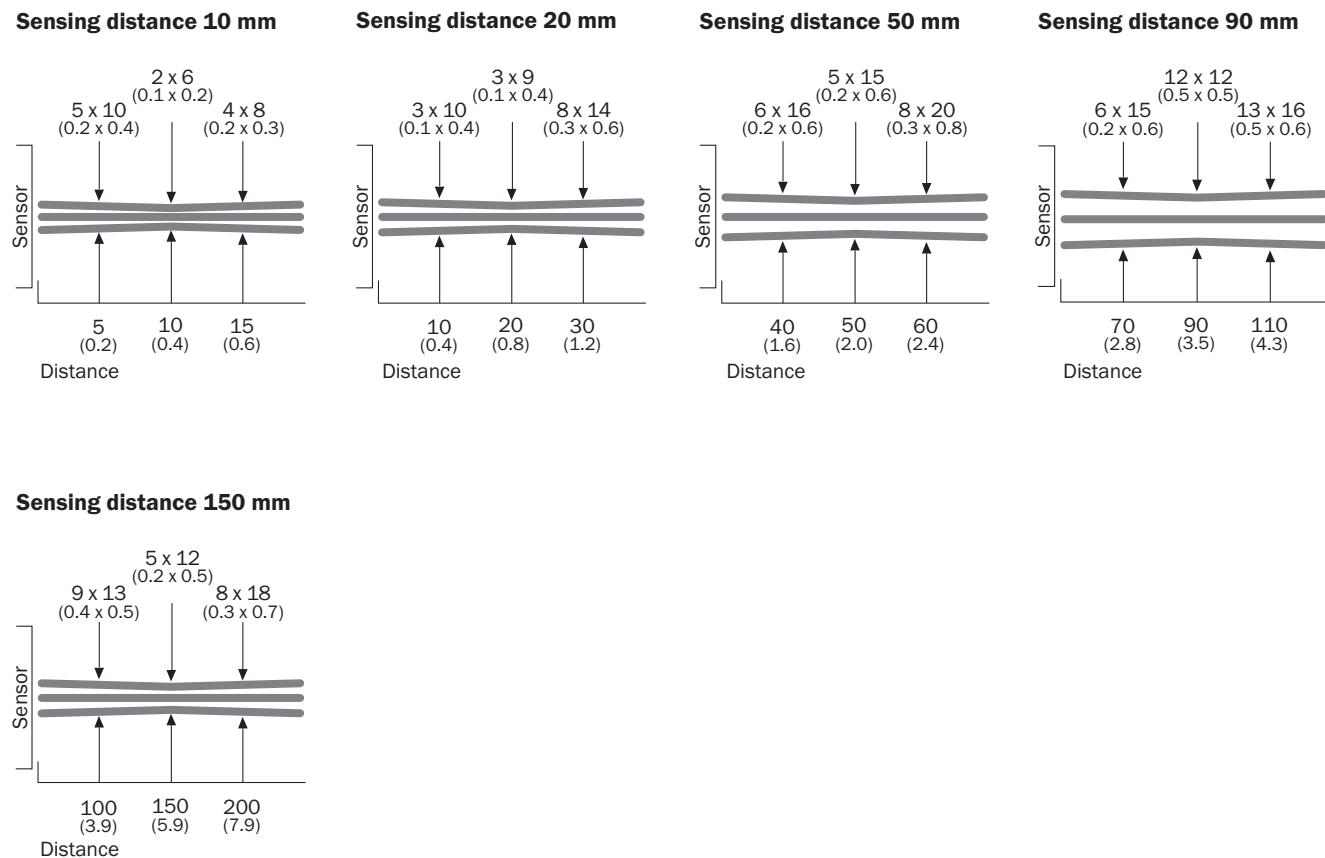
Adjustments are intended for luminescence background suppression.

## 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



All dimensions in mm (inch)

## Recommended accessories

Other models and accessories → [www.sick.com/LUT9](http://www.sick.com/LUT9)

	Brief description	Type	part no.
Mounting systems			
	<ul style="list-style-type: none"> <li><b>Description:</b> Plate G for universal clamp bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li> <li><b>Usable for:</b> W34, LUT3, KT5-2, KT10, CS8, W24-2, KT8, KT8</li> </ul>	BEF-KHS-G01	2022464
	<ul style="list-style-type: none"> <li><b>Description:</b> Plate K for universal clamp bracket</li> <li><b>Material:</b> Steel</li> <li><b>Details:</b> Steel, zinc coated</li> <li><b>Items supplied:</b> Universal clamp (2022726), mounting hardware</li> <li><b>Usable for:</b> 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</li> </ul>	BEF-KHS-K01	2022718

	<b>Brief description</b>	<b>Type</b>	<b>part no.</b>
reflectors and optics			
	• <b>Description:</b> Lens, 10 mm sensing distance	OBJ-LUT3-10	2016348
	• <b>Description:</b> Lens, 20 mm sensing distance	OBJ-LUT3-20	2016349
	• <b>Description:</b> Lens, 50 mm sensing distance	OBJ-LUT3-50	2016350
	• <b>Description:</b> Lens, 90 mm scanning distance	OBJ-026	1001326

	Brief description	Type	part no.
connectors and cables			
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li><b>Description:</b> Unshielded</li><li><b>Connection systems:</b> Screw-type terminals</li><li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li></ul>	DOS-1205-G	6009719
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Description:</b> Unshielded</li><li><b>Connection systems:</b> Screw-type terminals</li><li><b>Permitted cross-section:</b> ≤ 0.75 mm<sup>2</sup></li></ul>	DOS-1205-W	6009720
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 2 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YG2A15-020VB5XLEAX	2096215
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 5 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YG2A15-050VB5XLEAX	2096216
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 10 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YG2A15-100VB5XLEAX	2096217
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 2 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A15-020VB5XLEAX	2096239
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 5 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A15-050VB5XLEAX	2096240
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 10 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YF2A15-100VB5XLEAX	2096241
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 0.6 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YG2A15-C60VB5XLEAX	2145573
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 1 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YG2A15-010VB5XLEAX	2145574
	<ul style="list-style-type: none"><li><b>Connection type head A:</b> Female connector, M12, 5-pin, angled, A-coded</li><li><b>Connection type head B:</b> Flying leads</li><li><b>Signal type:</b> Sensor/actuator cable</li><li><b>Cable:</b> 3 m, 5-wire, PVC</li><li><b>Description:</b> Sensor/actuator cable, unshielded</li><li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li></ul>	YG2A15-030VB5XLEAX	2145575

	<b>Brief description</b>	<b>Type</b>	<b>part no.</b>
	<ul style="list-style-type: none"> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 0.6 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-C60VB5XLEAX	2145570
	<ul style="list-style-type: none"> <li><b>Connection type head A:</b> Female connector, M12, 5-pin, straight, A-coded</li> <li><b>Connection type head B:</b> Flying leads</li> <li><b>Signal type:</b> Sensor/actuator cable</li> <li><b>Cable:</b> 3 m, 5-wire, PVC</li> <li><b>Description:</b> Sensor/actuator cable, unshielded</li> <li><b>Application:</b> Zones with chemicals, Uncontaminated zones</li> </ul>	YF2A15-030VB5XLEAX	2145572

## 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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