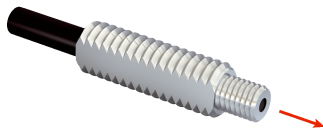


## LL3-TR01

Fiber-optic cables

FIBER-OPTIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
LL3-TR01	5308052

Other models and accessories → [www.sick.com/Fiber-optic\\_cables](http://www.sick.com/Fiber-optic_cables)

### Detailed technical data

#### Features

<b>Device type</b>	Fiber-optic cables
<b>Functional principle</b>	Through-beam system, consisting of a sender and a receiver
<b>Fiber-optic head design</b>	Threaded sleeve
<b>Application</b>	High flexible (static), Robotics (dynamic flexible)
<b>Compatible fiber-optic amplifiers</b>	GLL70, WLL80, WLL180, GLL170(T), WLL24 Ex
<b>Sensing range max.</b>	3,600 mm (Sensing range of WLL80 at 8 ms)
<b>Minimal object diameter</b>	0.3 mm <sup>1)</sup>
<b>Optical fiber head</b>	
Angle of dispersion	60°
Integrated lens	No
Compatibility tip adapters	Yes
<b>Optical fiber</b>	
Compatibility with infrared light	No
Optical fiber cable can be shortened	✓
Adapter end sleeves required	No
<b>Included with delivery</b>	Mounting, 4 x M3 hexagon nut, 4 x washer, FC fiber cutter (5304141)

<sup>1)</sup> Minimum detectable object was determined at optimum measuring distance and optimum setting.

#### Mechanics

<b>Optical fiber head</b>	
Light emission	Axial
Thread diameter (housing)	M4
Optical fiber taper diameter	≥ 2.6 mm
Optical fiber taper length after 2 mm	≥ 3 mm
<b>Optical fiber</b>	
Fiber length	2,000 mm
Bending radius	4 mm
Dynamic flexibility (robotics)	Yes
Outside diameter, optical fiber cable connection	2.2 mm
Fiber arrangement	Multi-fiber
Core structure	16 x Ø 0,265 mm Multi-fiber
<b>Material</b>	
Optical fiber head	Copper-zinc alloy (CuZn)

	Sheath	Polyethylen (PE)
	Fibers	Polymethylmethacrylat (PMMA)
<b>Weight</b>		35 g

## Ambient data

<b>Ambient operating temperature</b>	-40 °C ... +70 °C
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## Sensing ranges with WLL80

<b>Operating mode 16 µs</b>	320 mm
<b>Operating mode 70 µs</b>	955 mm
<b>Operating mode 250 µs</b>	1,505 mm
<b>Operating mode 500 µs</b>	1,835 mm
<b>Operating mode 1 ms</b>	2,055 mm
<b>Operating mode 2 ms</b>	2,880 mm
<b>Operating mode 8 ms</b>	3,600 mm
<b>Note</b>	Sensing ranges related to fiber-optic sensors with type of light: visible red light

## Sensing ranges with WLL180T

<b>Operating mode 16 µs</b>	200 mm
<b>Operating mode 70 µs</b>	600 mm
<b>Operating mode 250 µs</b>	1,000 mm
<b>Operating mode 2 ms</b>	2,400 mm
<b>Operating mode 8 ms</b>	4,000 mm
<b>Note</b>	Sensing ranges related to fiber-optic sensors with type of light: visible red light

## Sensing ranges with GLL170

<b>Operating mode 250 µs</b>	470 mm
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## Sensing ranges with GLL170T

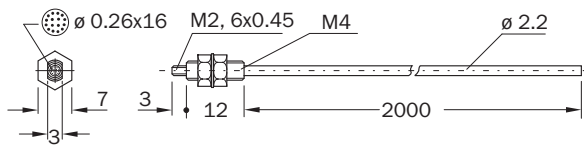
<b>Operating mode 50 µs</b>	380 mm
<b>Operating mode 250 µs</b>	680 mm

## Classifications

<b>ECLASS 5.0</b>	27270905
<b>ECLASS 5.1.4</b>	27270905
<b>ECLASS 6.0</b>	27270905
<b>ECLASS 6.2</b>	27270905
<b>ECLASS 7.0</b>	27270905
<b>ECLASS 8.0</b>	27270905
<b>ECLASS 8.1</b>	27270905
<b>ECLASS 9.0</b>	27270905
<b>ECLASS 10.0</b>	27270905
<b>ECLASS 11.0</b>	27270905
<b>ECLASS 12.0</b>	27270905
<b>ETIM 5.0</b>	EC002651

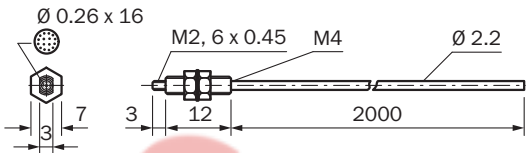
<b>ETIM 6.0</b>	EC002651
<b>ETIM 7.0</b>	EC002651
<b>ETIM 8.0</b>	EC002651
<b>UNSPSC 16.0901</b>	39121528

### Dimensional drawing



Dimensions in mm (inch)

### Dimensional drawing LL3-TR01



Dimensions in mm (inch)

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## 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)

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