

# LL3-DB02-10

Fiber-optic cables

FIBER-OPTIC SENSORS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	part no.
LL3-DB02-10	5328568

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>	Proximity system
<b>Fiber-optic head design</b>	Threaded sleeve, Long end sleeve, Bendable sleeve, 90° deflection
<b>Application</b>	Standard
<b>Compatible fiber-optic amplifiers</b>	GLL70, WLL80, WLL180, GLL170(T), WLL24 Ex
<b>Sensing range max.</b>	Depending on the fiber optic amplifier used
<b>Minimal object diameter</b>	0.015 mm <sup>1)</sup>
<b>Optical fiber head</b>	
Angle of dispersion	60°
Integrated lens	No
Compatibility tip adapters	No
<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, 2 x M6 hexagon nut, 2 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)	M6
Optical fiber taper diameter	≥ 2.5 mm
Optical fiber taper length after 2 mm	≥ 90 mm
Minimum bend radius of end sleeve	10 mm
<b>Optical fiber</b>	
Fiber length	10,000 mm
Bending radius	25 mm
Dynamic flexibility (robotics)	No
Outside diameter, optical fiber cable connection	2.2 mm
Fiber arrangement	Coaxial

<sup>1)</sup> C = Coaxial, S = Sender, E = Receiver.

	Core structure	S: Ø 1 mm, R: 16 x Ø 0,25 mm <sup>1)</sup> Coaxial
<b>Material</b>	Optical fiber head	Stainless steel
	Sheath	Polyethylen (PE)
	Fibers	Polymethylmethacrylat (PMMA)
	<b>Weight</b>	98 g

<sup>1)</sup> C = Coaxial, S = Sender, E = Receiver.

#### Ambient data

<b>Ambient operating temperature</b>	-40 °C ... +70 °C
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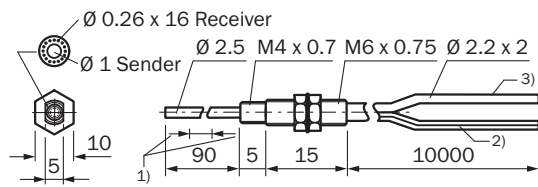
#### Sensing ranges with WLL180T

<b>Operating mode 16 µs</b>	100 mm
<b>Operating mode 70 µs</b>	350 mm
<b>Operating mode 250 µs</b>	580 mm
<b>Operating mode 2 ms</b>	850 mm
<b>Operating mode 8 ms</b>	1,300 mm
<b>Note</b>	Sensing ranges related to fiber-optic sensors with type of light: visible red light

#### 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





- 1) Flexible end tip, do not bend in this area (10 mm), bend radius R10 mm
- 2) Sender (marked blue)
- 3) Receiver

Dimensions in mm (inch)

### Recommended accessories

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

	Brief description	Type	part no.
device protection and care			
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Metal protection hose for LL3-Fibers with M6 threaded head; length 1000 mm</li> <li>• <b>Items supplied:</b> 1 pieces</li> </ul>	BEF-LL3M61000	5331291
	<ul style="list-style-type: none"> <li>• <b>Description:</b> Metal protection hose for LL3-Fibers with M6 threaded head; length 500 mm</li> <li>• <b>Items supplied:</b> 1 pieces</li> </ul>	BEF-LL3M6500	5331290

## 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)