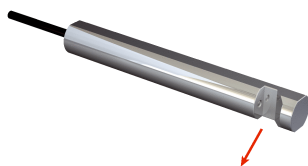


# LL3-TS22

Fiber-optic cables

FIBERS

**SICK**  
Sensor Intelligence.



### Ordering information

Type	Part no.
LL3-TS22	5325944

**Included in delivery:** BF-WLL160-10 (1), FC (1)

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
<b>Fiber-optic head design</b>	90° deflection, Smooth sleeve, 90° deflection
<b>Application</b>	Standard, lcd / clear material / semiconductor
<b>Special features</b>	Small 3° aperture angle
<b>Compatible fiber-optic amplifiers</b>	WLL80, WLL180, GLL170(T)
<b>Sensing range max.</b>	3,600 mm (Sensing range of WLL80 at 8 ms)
<b>Minimal object diameter</b>	0.05 mm <sup>1)</sup>
<b>Optical fiber head</b>	
Angle of dispersion	6.3°
Integrated lens	Yes
Compatibility tip adapters	No
<b>Optical fiber</b>	
Compatibility with infrared light	No
Optical fiber cable can be shortened	✓
Adapter end sleeves required	Yes
<b>Included with delivery</b>	Adapter sleeves, BF-WLL160-10 (1.0 mm) adapter sleeves, FC fiber cutter (5304141), protective cladding for fiber head

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

#### Mechanics

<b>Optical fiber head</b>		
Light emission	Radial	
<b>Optical fiber</b>		
Fiber length	2,000 mm	
Bending radius	25 mm	
Dynamic flexibility (robotics)	No	
Outside diameter, optical fiber cable connection	1 mm	
Fiber arrangement	Singlefiber	
Core structure	Ø 0,5 mm Singlefiber	
<b>Material</b>		
Optical fiber head	Stainless steel	

	Sheath	Polyethylen (PE)
	Fibers	Polymethylmethacrylat (PMMA)
<b>Weight</b>		22 g

## Ambient data

<b>Ambient operating temperature</b>	-40 °C ... +55 °C
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## 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

## Sensing ranges with WLL80

<b>Operating mode 16 µs</b>	1,155 mm
<b>Operating mode 70 µs</b>	3,475 mm
<b>Operating mode 250 µs</b>	3,600 mm
<b>Operating mode 500 µs</b>	3,600 mm
<b>Operating mode 1 ms</b>	3,600 mm
<b>Operating mode 2 ms</b>	3,600 mm
<b>Operating mode 8 ms</b>	3,600 mm

## Sensing ranges with WLL180T

<b>Operating mode 16 µs</b>	390 mm
<b>Operating mode 70 µs</b>	1,300 mm
<b>Operating mode 250 µs</b>	2,600 mm
<b>Operating mode 2 ms</b>	4,000 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

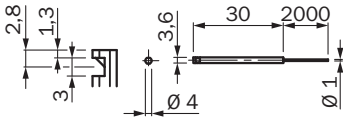
<b>Operating mode 250 µs</b>	1,470 mm
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### Sensing ranges with GLL170T

<b>Operating mode 50 <math>\mu</math>s</b>	1,130 mm
<b>Operating mode 250 <math>\mu</math>s</b>	1,980 mm

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

LL3-TS22



## 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)