# LL3-TH13

Fiber-optic cables

**FIBERS**

**SICK**
Sensor Intelligence.

# LL3-TH13 | Fiber-optic cables

## FIBERS

### Ordering information

| Type | Part no. |
|------|----------|
| LL3-TH13 | 5325973 |

Other models and accessories ➜ www.sick.com/Fiber-optic_cables

### Detailed technical data

#### Features

| | |
|---|---|
| **Device type** | Fiber-optic cables |
| **Functional principle** | Through-beam system |
| **Fiber-optic head design** | Threaded sleeve |
| **Application** | Heat-resistant (≥100 °C) |
| **Special features** | Combination of 2000 mm cost-effective low-temperature cable and 300 mm high-temperature cable (200 °C) |
| **Compatible fiber-optic amplifiers** | WLL80, WLL180, GLL170(T) |
| **Sensing range max.** | 2,990 mm (Sensing range of WLL80 at 8 ms) |
| **Minimal object diameter** | 0.12 mm [1] |
| **Optical fiber head** | |
| Angle of dispersion | 60° |
| Integrated lens | No |
| Compatibility tip adapters | Yes |
| **Optical fiber** | |
| Compatibility with infrared light | No [2] |
| Adapter end sleeves required | No |
| **Included with delivery** | Mounting, 6 x M4 hexagon nut, 2 x M4 hexagon nut (plastic), 4 x washer, FC fiber cutter (5304141), LL3-TB09 |

[1] Minimum detectable object was determined at optimum measuring distance and optimum setting.

[2] Reduced sensing ranges possible when using a fiber-optic amplifier with infrared light.

#### Mechanics

| | |
|---|---|
| **Optical fiber head** | |
| Light emission | Axial |
| Thread diameter (housing) | M4 |
| Optical fiber taper diameter | ≥ 2.6 mm |
| Optical fiber taper length after 2 mm | ≥ 3 mm |
| **Optical fiber** | |
| Fiber length | 2,000 mm |
| Bending radius | 25 mm |
| Dynamic flexibility (robotics) | No |
| Outside diameter, optical fiber cable connection | 2.2 mm |
| Fiber arrangement | Singlefiber |

| | |
|---|---|
| Core structure | Ø 0,8 mm Singlefiber |
| **Material** | |
| Optical fiber head | Copper-zinc alloy (CuZn) |
| Sheath | Stainless steel |
| Fibers | Glass |
| **Weight** | 97 g |

## Ambient data

| | |
|---|---|
| **Ambient operating temperature** | –60 °C ... +200 °C |

## Classifications

| | |
|---|---|
| **ECLASS 5.0** | 27270905 |
| **ECLASS 5.1.4** | 27270905 |
| **ECLASS 6.0** | 27270905 |
| **ECLASS 6.2** | 27270905 |
| **ECLASS 7.0** | 27270905 |
| **ECLASS 8.0** | 27270905 |
| **ECLASS 8.1** | 27270905 |
| **ECLASS 9.0** | 27270905 |
| **ECLASS 10.0** | 27270905 |
| **ECLASS 11.0** | 27270905 |
| **ECLASS 12.0** | 27270905 |
| **ETIM 5.0** | EC002651 |
| **ETIM 6.0** | EC002651 |
| **ETIM 7.0** | EC002651 |
| **ETIM 8.0** | EC002651 |
| **UNSPSC 16.0901** | 39121528 |

## Sensing ranges with WLL80

| | |
|---|---|
| **Operating mode 16 µs** | 230 mm |
| **Operating mode 70 µs** | 680 mm |
| **Operating mode 250 µs** | 1,080 mm |
| **Operating mode 500 µs** | 1,330 mm |
| **Operating mode 1 ms** | 1,570 mm |
| **Operating mode 2 ms** | 2,065 mm |
| **Operating mode 8 ms** | 2,990 mm |

## Sensing ranges with WLL180T

| | |
|---|---|
| **Operating mode 16 µs** | 100 mm |
| **Operating mode 70 µs** | 330 mm |
| **Operating mode 250 µs** | 570 mm |
| **Operating mode 2 ms** | 1,100 mm |
| **Operating mode 8 ms** | 1,200 mm |
| **Note** | Sensing ranges related to fiber-optic sensors with type of light: visible red light |

## Sensing ranges with GLL170

| | |
|---|---|
| **Operating mode 250 µs** | 270 mm |

## Sensing ranges with GLL170T

| | |
|---|---|
| **Operating mode 50 µs** | 330 mm |
| **Operating mode 250 µs** | 490 mm |

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

LL3-TH13
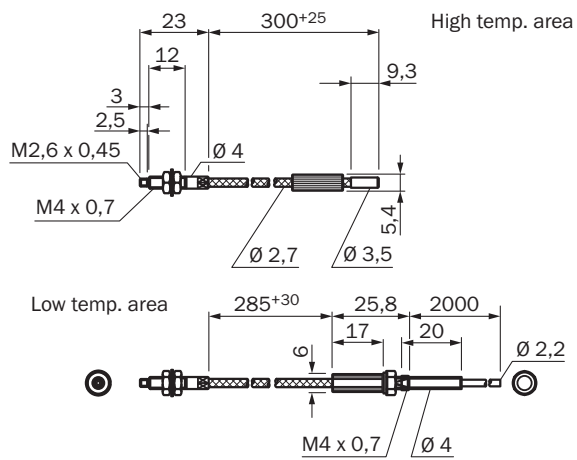
## SICK AT A GLANCE

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**

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