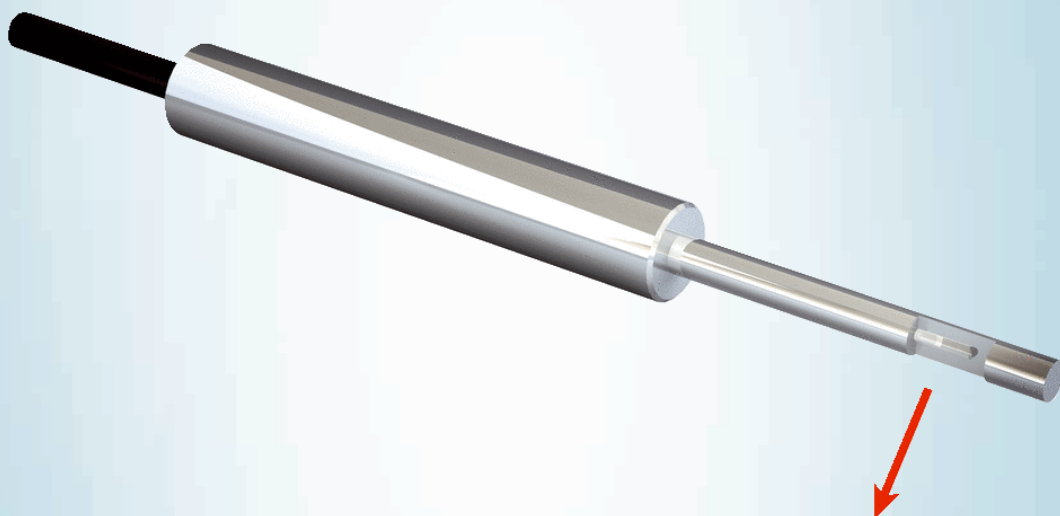


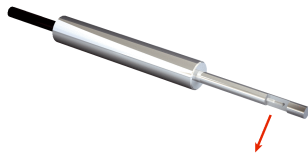


# LL3-TV02

LL3

FIBERS

**SICK**  
Sensor Intelligence.



## Ordering information

| Type     | Part no. |
|----------|----------|
| LL3-TV02 | 5308059  |

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

Other models and accessories → [www.sick.com/LL3](http://www.sick.com/LL3)

## Detailed technical data

## Features

|                                                            |                                                                                   |
|------------------------------------------------------------|-----------------------------------------------------------------------------------|
| <b>Device type</b>                                         | Fibers, fiber suitable for WLL260                                                 |
| <b>Functional principle</b>                                | Through-beam system                                                               |
| <b>Functional principle detail</b>                         | Consisting of a sender and a receiver                                             |
| <b>For fiber-optic sensor</b>                              | GLL170(T), WLL180, WLL80                                                          |
| <b>Fiber length</b>                                        | 2,000 mm                                                                          |
| <b>Fiber material</b>                                      | Polymethylmethacrylat (PMMA)                                                      |
| <b>Jacket material</b>                                     | Polyethylen (PE)                                                                  |
| <b>Fiber head material</b>                                 | Stainless steel                                                                   |
| <b>Outer diameter, fiber-optic cable connection</b>        | 1 mm                                                                              |
| <b>Fiber-optic cable cuttable</b>                          | ✓                                                                                 |
| <b>Smooth sleeve diameter (greatest diameter)</b>          | 2.5 mm                                                                            |
| <b>Fiber-optic head design</b>                             | Smooth sleeve, Long end sleeve, 90° deflection                                    |
| <b>Fiber arrangement</b>                                   | Monofiber                                                                         |
| <b>Core structure</b>                                      | Ø 0,5 mm Monofiber                                                                |
| <b>Angle of dispersion &lt; 60°</b>                        | No                                                                                |
| <b>Compatibility with infrared light (1,450 nm)</b>        | No                                                                                |
| <b>Diameter/thread size from 2 mm taper</b>                | ≥ 1 mm                                                                            |
| <b>Length of taper</b>                                     | ≥ 10 mm                                                                           |
| <b>Diameter of taper</b>                                   | ≥ 1 mm                                                                            |
| <b>Highly flexible/elastic fibers (bend radius 1–4 mm)</b> | No                                                                                |
| <b>Adapter end sleeves required</b>                        | Yes                                                                               |
| <b>Angle of dispersion</b>                                 | 60°                                                                               |
| <b>Integrated lens</b>                                     | No                                                                                |
| <b>Minimal object diameter</b>                             | 0.1 mm <sup>1)</sup>                                                              |
| <b>Included with delivery</b>                              | Adapter sleeves, BF-WLL160-10 (1.0 mm) adapter sleeves, FC fiber cutter (5304141) |
| <b>Compatibility tip adapters</b>                          | No                                                                                |
| <b>Special features</b>                                    | 90° deflection integrated, extra small jacket, minimum insertion depths           |

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

## Mechanics/electronics

|                                       |                   |
|---------------------------------------|-------------------|
| <b>Bend radius, fibre-optic cable</b> | 15 mm             |
| <b>Ambient operating temperature</b>  | -40 °C ... +70 °C |

## 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>  | 75 mm    |
| <b>Operating mode 70 µs</b>  | 240 mm   |
| <b>Operating mode 250 µs</b> | 375 mm   |
| <b>Operating mode 500 µs</b> | 480 mm   |
| <b>Operating mode 1 ms</b>   | 540 mm   |
| <b>Operating mode 2 ms</b>   | 725 mm   |
| <b>Operating mode 8 ms</b>   | 1,070 mm |

## Sensing ranges with WLL180T

|                              |                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------|
| <b>Operating mode 16 µs</b>  | 30 mm                                                                               |
| <b>Operating mode 70 µs</b>  | 130 mm                                                                              |
| <b>Operating mode 250 µs</b> | 250 mm                                                                              |
| <b>Operating mode 2 ms</b>   | 550 mm                                                                              |
| <b>Operating mode 8 ms</b>   | 800 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> | 110 mm |
|------------------------------|--------|

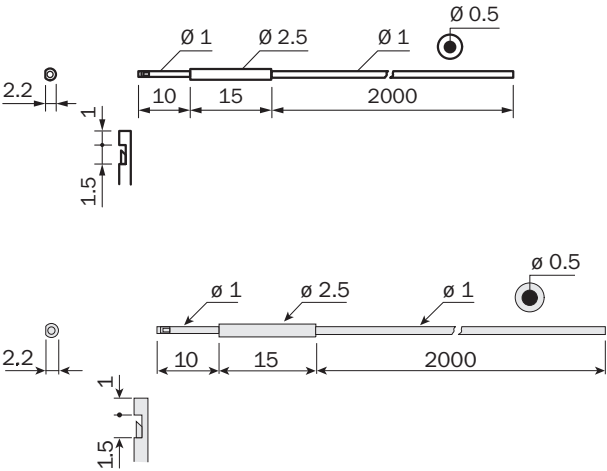
## Sensing ranges with GLL170T

|                             |       |
|-----------------------------|-------|
| <b>Operating mode 50 µs</b> | 90 mm |
|-----------------------------|-------|

|                       |        |
|-----------------------|--------|
| Operating mode 250 µs | 170 mm |
|-----------------------|--------|

Dimensional drawing (Dimensions in mm (inch))

LL3-TV02



## 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)