



# LL3-LM32450

Fiber-optic cables

**FIBER-OPTIC SENSORS**

**SICK**  
Sensor Intelligence.



Illustration may differ

Ordering information

| Type        | part no. |
|-------------|----------|
| LL3-LM32450 | 2073499  |

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

Detailed technical data

Features

|                                   |                                                            |
|-----------------------------------|------------------------------------------------------------|
| Device type                       | Fiber-optic cables                                         |
| Functional principle              | Through-beam system, consisting of a sender and a receiver |
| Fiber-optic head design           | Smooth sleeve, Long end sleeve                             |
| Application                       | Standard                                                   |
| Compatible fiber-optic amplifiers | GLL70, WLL80, WLL180, GLL170(T)                            |
| Sensing range max.                | Depending on the fiber optic amplifier used                |
| Minimal object diameter           | 0.5 mm                                                     |
| Optical fiber head                |                                                            |
| Angle of dispersion               | 60°                                                        |
| Integrated lens                   | No                                                         |
| Compatibility tip adapters        | No                                                         |
| Optical fiber                     |                                                            |
| Compatibility with infrared light | Yes <sup>1)</sup>                                          |
| Adapter end sleeves required      | No                                                         |

<sup>1)</sup> Reduced sensing ranges possible when using a fiber-optic amplifier with infrared light.

Mechanics

|                                                  |                          |
|--------------------------------------------------|--------------------------|
| Optical fiber head                               |                          |
| Light emission                                   | Axial                    |
| Smooth sleeve diameter                           | 5.8 mm                   |
| Optical fiber taper diameter                     | ≥ 4 mm                   |
| Optical fiber taper length after 2 mm            | ≥ 11.4 mm                |
| Optical fiber                                    |                          |
| Fiber length                                     | 450 mm                   |
| Bending radius                                   | 20 mm                    |
| Dynamic flexibility (robotics)                   | No                       |
| Outside diameter, optical fiber cable connection | 2.2 mm                   |
| Fiber arrangement                                | Singlefiber              |
| Core structure                                   | Singlefiber              |
| Material                                         |                          |
| Optical fiber head                               | Chrome-plated metal coil |
| Sheath                                           | Polyvinylchlorid (PVC)   |
| Fibers                                           | Glass                    |

|               |      |
|---------------|------|
| <b>Weight</b> | 49 g |
|---------------|------|

## Ambient data

|                                      |                   |
|--------------------------------------|-------------------|
| <b>Ambient operating temperature</b> | -10 °C ... +60 °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 WLL180T

|                              |                                                                                     |
|------------------------------|-------------------------------------------------------------------------------------|
| <b>Operating mode 16 µs</b>  | 200 mm                                                                              |
| <b>Operating mode 70 µs</b>  | 550 mm                                                                              |
| <b>Operating mode 250 µs</b> | 580 mm                                                                              |
| <b>Operating mode 2 ms</b>   | 580 mm                                                                              |
| <b>Operating mode 8 ms</b>   | 580 mm                                                                              |
| <b>Note</b>                  | Sensing ranges related to fiber-optic sensors with type of light: visible red light |

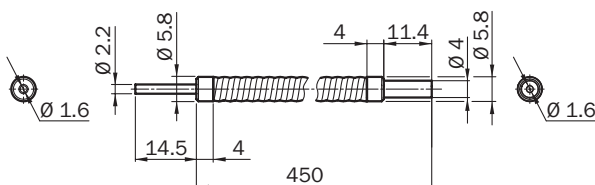
## Sensing ranges with GLL170

|                              |        |
|------------------------------|--------|
| <b>Operating mode 250 µs</b> | 305 mm |
|------------------------------|--------|

## Sensing ranges with GLL170T

|                              |        |
|------------------------------|--------|
| <b>Operating mode 50 µs</b>  | 623 mm |
| <b>Operating mode 250 µs</b> | 640 mm |

## Dimensional drawing LL3-LM32450



Dimensions in mm (inch)

## 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)