



# LL3-LM311500

LL3

FIBERS

**SICK**  
Sensor Intelligence.



Illustration may differ

## Ordering information

| Type         | Part no. |
|--------------|----------|
| LL3-LM311500 | 2073486  |

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

## Detailed technical data

### Features

|                                                            |                                        |
|------------------------------------------------------------|----------------------------------------|
| <b>Device type</b>                                         | Fibers                                 |
| <b>Functional principle</b>                                | Proximity system                       |
| <b>Functional principle detail</b>                         | Consisting of a sender and a receiver  |
| <b>Compatible fiber-optic amplifiers</b>                   | GLL170(T), WLL180, WLL80               |
| <b>Sensing range max.</b>                                  | Depends on the fiber-optic sensor used |
| <b>Fiber length</b>                                        | 1,500 mm                               |
| <b>Fiber material</b>                                      | Glass                                  |
| <b>Jacket material</b>                                     | Polyvinylchlorid (PVC)                 |
| <b>Fiber head material</b>                                 | Chrome-plated metal coil               |
| <b>Outer diameter, fiber-optic cable connection</b>        | 2.2 mm                                 |
| <b>Smooth sleeve diameter (greatest diameter)</b>          | 5.8 mm                                 |
| <b>Fiber-optic head design</b>                             | Smooth sleeve, Long end sleeve         |
| <b>Array width</b>                                         | 4 mm                                   |
| <b>Fiber arrangement</b>                                   | Multi-fiber – fiber bundle             |
| <b>Core structure</b>                                      | Multi-fiber – fiber bundle             |
| <b>Angle of dispersion &lt; 60°</b>                        | No                                     |
| <b>Compatibility with infrared light (1,450 nm)</b>        | Yes <sup>1)</sup>                      |
| <b>Diameter/thread size from 2 mm taper</b>                | ≥ 4 mm                                 |
| <b>Length of taper</b>                                     | ≥ 11.4 mm                              |
| <b>Diameter of taper</b>                                   | ≥ 4 mm                                 |
| <b>Highly flexible/elastic fibers (bend radius 1–4 mm)</b> | No                                     |
| <b>Adapter end sleeves required</b>                        | No                                     |
| <b>Angle of dispersion</b>                                 | 60°                                    |
| <b>Integrated lens</b>                                     | No                                     |
| <b>Minimal object diameter</b>                             | 0.5 mm                                 |
| <b>Compatibility tip adapters</b>                          | No                                     |

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

### Mechanics/electronics

|                                       |                   |
|---------------------------------------|-------------------|
| <b>Bend radius, fibre-optic cable</b> | 20 mm             |
| <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>  | 50 mm                                                                               |
| <b>Operating mode 70 µs</b>  | 140 mm                                                                              |
| <b>Operating mode 250 µs</b> | 240 mm                                                                              |
| <b>Operating mode 2 ms</b>   | 220 mm                                                                              |
| <b>Operating mode 8 ms</b>   | 220 mm                                                                              |
| <b>Note</b>                  | Sensing ranges related to fiber-optic sensors with type of light: visible red light |

## Sensing ranges with GLL170

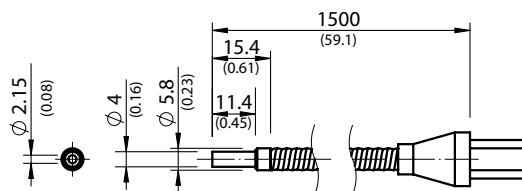
|                              |        |
|------------------------------|--------|
| <b>Operating mode 250 µs</b> | 125 mm |
|------------------------------|--------|

## Sensing ranges with GLL170T

|                              |        |
|------------------------------|--------|
| <b>Operating mode 50 µs</b>  | 217 mm |
| <b>Operating mode 250 µs</b> | 332 mm |

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

LL3-LM311500



## 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)