



# OL1

Exact line guidance throughout the whole spectrum

DISPLACEMENT MEASUREMENT SENSORS

**SICK**  
Sensor Intelligence.

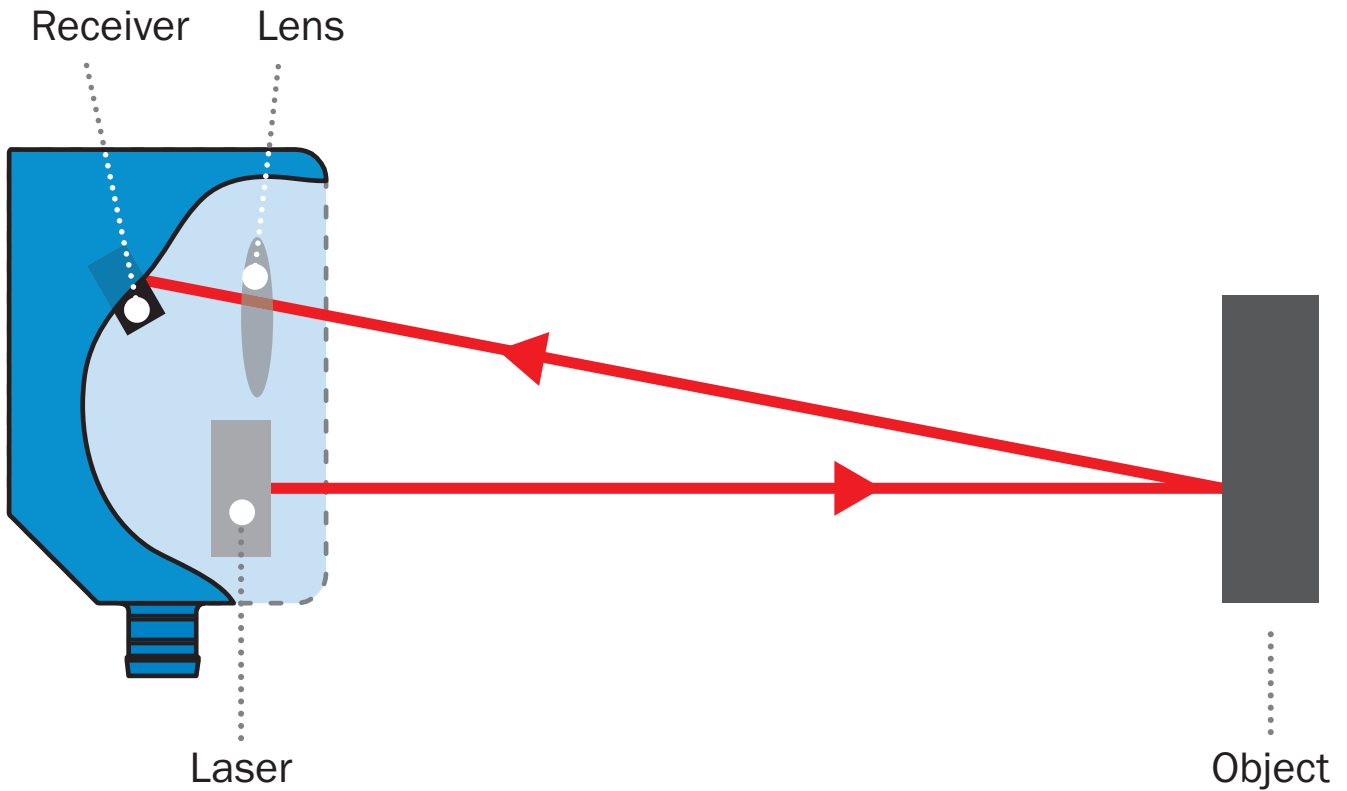
Advantages



**Precision meets quality**

With expert-developed intelligent measurement technology which proves its worth in industrial applications time and time again, SICK offers the solution to any challenge which demands maximum measurement accuracy and quality. A pioneering spirit founded on our years of experience and our own innovations in optical sensor technology. We ensure efficient processes while fulfilling the demands of even complex measuring tasks – regardless of surface, diameter, thickness, or width, and regardless of whether an object is to be positioned or measured. This is how we ensure that your products are every bit as perfect as you want them to be. Moreover, SICK’s measurement technology supports quality assurance processes and delivers cost-saving benefits. Have a look on [www.sick.com/measurement-sensors](https://www.sick.com/measurement-sensors)

A point of light is projected onto the measuring object. The light reflected is captured by a light-sensitive receiver at a specific angle. Based on the angle between the send and receive direction, the position of the object is then triangulated (from the Latin “triangulum” = triangle).





## Precise detection in the micrometer range

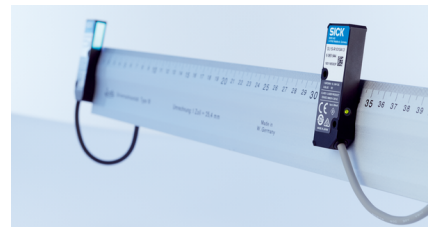
OL1 is the ideal optical micrometer for applications combining limited space with high performance requirements, thanks to its 10 mm-wide light band with high repeatability. Whether it is tiny objects, threads, or web material: The sensor with laser class 1 enables thickness measurements and position determination with micrometer precision to ensure reliable process control.



Reliable detection of objects from a size of 0.2 mm upward



High-precision material guidance thanks to repeatability in the micrometer range



Flexible use thanks to a distance of up to 300 mm between sender and receiver

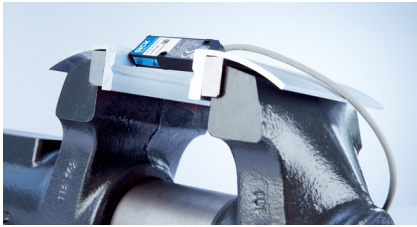


**High performance stability: The OL1 measures material thicknesses and edge positions with high repeatability in the micrometer range.**



## Versatile use, compact size

With a width of just 9.6 mm, the OL1 can be flexibly integrated into systems where space is limited. The light band is easy to align thanks to the LED alignment aid on the device. The sensor can also be configured externally via the AOD1 evaluation unit as a convenient alternative. This guarantees quick commissioning of the optical micrometer in a wide range of production environments.



Rugged miniature metal housing



The compact sensor design means it can be used in the tightest of installation spaces



Intuitive alignment thanks to display parameterization and LED alignment aid



**Quick commissioning: Thanks to their convenient alignment, the sender and receiver can even be easily integrated into miniaturized machine units.**

## SICK LifeTime Services

**SICK's services increase machine and plant productivity, enhance the safety of people all over the world, provide a solid foundation for a sustainable business operation, and protect investment goods. In addition to its usual consulting services, SICK provides direct on-site support during the conceptual design and commissioning phases as well as during operation.**

**The range of services not only covers aspects like maintenance and inspection, but also includes performance checks as well as upgrades and retrofits. Modular or customized service contracts extend the service life of plants and therefore increase their availability. If faults occur or limit values are exceeded, these are detected at all times by the corresponding sensors and systems.**



### **Consulting and design**

Application-specific advice on the product, its integration and the application itself.



### **commissioning and maintenance**

Application-optimized and sustainable — thanks to professional commissioning and maintenance by a trained SICK service technician.



### **service contracts**

Extended warranty, SICK Remote Service, 24-hour helpdesk, maintenance, availability guarantees and other modular components can be individually combined on request.



### Technical data overview

<b>Measuring range</b>	10 mm
<b>Linearity</b>	± 40 µm
<b>Repeatability</b>	10 µm
<b>Response time</b>	≥ 0.5 ms
<b>Measuring frequency</b>	≤ 2 kHz
<b>Digital output</b>	3 x PNP/NPN, selectable
<b>Light source</b>	Laser, red
<b>Type of light</b>	Visible red light
<b>Serial</b>	✓
<b>Analog output</b>	Number 1 Type Current output
<b>Ambient temperature, operation</b>	-10 °C ... +50 °C <sup>1)</sup>

<sup>1)</sup> Operating temperature at V<sub>S</sub> = 24 V.

### Product description

The OL1 optical micrometer stands out due to its miniature design and is small enough to fit in the tiniest machine spaces. Thanks to the LED alignment aid and a function for aligning the light band integrated into the AOD1 evaluation unit, installing and aligning the sender and receiver unit is child's play. In particular, the OL1 sensor shows its strengths with the high-precision edge guiding function, for instance with the repeatable guidance of electrode material in battery production or the double layer detection of thin wafers. Due to the high performance reserve, the OL1 determines the edge position of semi-transparent materials exactly or reliably moves thin textile threads or wires back on the right track.

### At a glance

- Miniature metal housing
- Integrated LED alignment aid
- High-resolution CMOS receiver with high repeatability
- Various interfaces available via AOD1 evaluation unit
- Measurement of edge position or diameter
- Individualized configuration settings and calculation functions via AOD1 evaluation unit

### Your benefits

- The rugged miniature housing makes it possible to use it in very small installation spaces
- Quick commissioning and easy machine integration via display configuration and LED-based alignment aid at the sensor heads
- Quality optimization due to thickness measurement with micrometer precision
- Reliable process control of web material thanks to exact edge position determination
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### Fields of application

- Edge control of battery electrodes
- Diameter and position monitoring of threads or wires
- Double layer detection when handling wafers
- Guidance of semi-transparent films
- Measurement of through holes in engine components
- Thickness measurement of films or textile web materials in calendaring processes

## Ordering information

Other models and accessories → [www.sick.com/OL1](http://www.sick.com/OL1)

- **Communication interface:** Serial
- **Housing material:** metal
- **Laser class:** 1
- **Measuring range:** 10 mm

Type of analog output	Connection type	Typ. light spot size (distance)	Digital output	Type	Part no.
Current output	Cable with M8 male connector, 4-pin, Y cable for connection to AOD1 evaluation unit	3 mm x 14 mm	3 x PNP/NPN, selectable	OL1S/OL1E-R1010A13	6065943

## 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)