



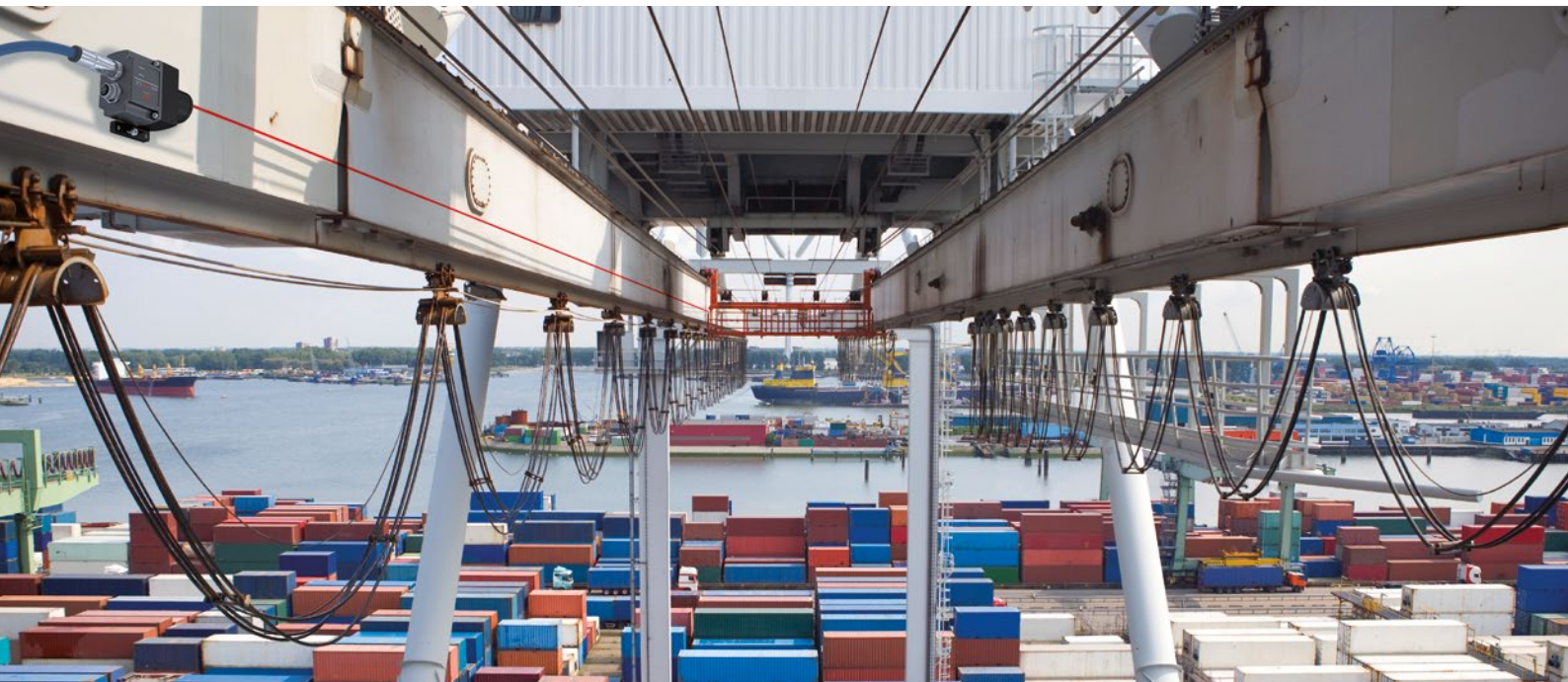
More Precision

optoNCDT ILR // Laser-optical distance sensors



Laser distance sensors

optoNCDT ILR



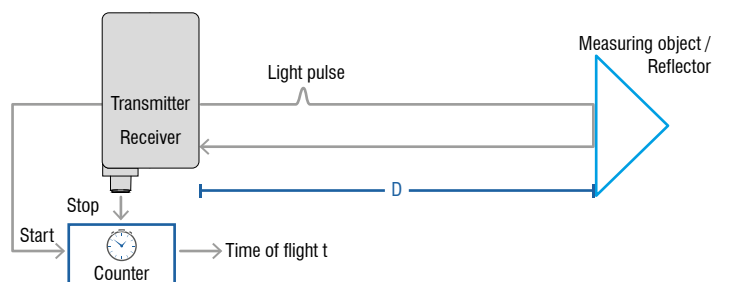
Laser distance sensors

optoNCDT ILR sensors are optoelectronic sensors for non-contact displacement, distance and also speed measurements. Their large measuring range enables to measure on critical surfaces such as, e.g., hot metals from a safe distance or to regulate large travel displacements. Wear-free measurements and thus a long service life are possible due to the non-contact measuring principle. Depending on the application, four sensor series are available focusing on different aspects (e.g., accuracy, measurement speed). These sensors are

designed for operation with and without reflector and are thus very flexible to use. Due to their robust construction and compact design, the ILR sensors are used indoors and outdoors for many different measurement tasks, both for static and moving measuring objects. The exact positioning of the sensor can be easily achieved by means of switchable sighting lasers or permanently visible measuring lasers.

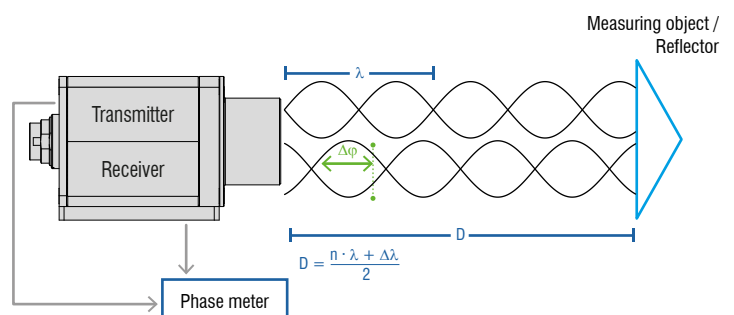
Time-of-flight principle

The ILR104x and ILR1171-125 sensors operate according to the time-of-flight measuring principle. A laser diode in the sensor produces short laser pulses that are projected onto the target. The light reflected from the target is recorded by the sensor element. The time of flight of the light pulse to the target and back determines the measurement distance. The integrated electronics in the sensor calculates the distance based on the time of flight and conditions the signal for analog and digital output. optoNCDT ILR sensors are resistant to ambient light.



Phase comparison measuring principle

The ILR2250-100 and ILR3800-100 sensors operate according to the phase comparison principle. High frequency modulated laser light with low amplitude is transmitted to the target. Depending on the distance of the object, the distance changes the phase relationship between transmitted and received signal. Sensors of this principle work very precisely over measuring ranges up to 150 meters.



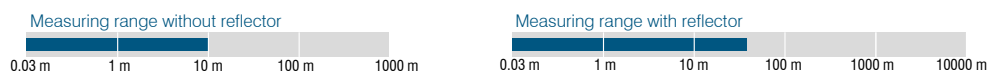
General information

Characteristics	4 - 5
Application examples	6 - 7

Compact and reliable laser distance sensor ILR104x

8 - 9

Measuring range	Repeatability	Linearity	Resolution	Interfaces	Operating temperature
0.03 - 60 m	< 3 mm	typ. ± 20 mm	1 mm	IO-Link 1.1 / Analog	-30 ... +60 °C



High-performance laser distance sensor for industrial applications ILR2250-100-IO

10 - 11

Measuring range	Repeatability	Linearity	Resolution	Interfaces	Operating temperature
0.05 - 150 m	< 300 μ m	< ± 1 mm	0.1 mm	IO-Link 1.1	-10 ... +50 °C



High-performance laser distance sensor for industrial applications ILR3800-100

12 - 13

Measuring range	Repeatability	Linearity	Resolution	Interfaces	Operating temperature
0.05 - 150 m	< 300 μ m	< ± 1 mm	0.1 mm	RS422 / USB / PROFINET / EtherNET/IP / Analog	-40 ... +55 °C



High-performance laser distance sensor ILR1171-125

14 - 15

Measuring range	Repeatability	Linearity	Resolution	Interfaces	Operating temperature
0.2 - 270 m	< 25 mm	< ± 60 mm	1 mm	RS232 / RS422 / Analog	-20 ... +60 °C



Accessories

Cables and interface modules	18 - 19
------------------------------	---------

Laser distance sensors optoNCDT ILR

- Rotatable cable outlet for easy integration
- Available in protection classes IP67/IP69/IP69K
- Laser class 1

Analog  **IO-Link**
inside

- Very high measuring rate up to 40 kHz
- Ideally suitable for speed measurements
- IP67
- Laser class 1

Analog **RS422** **RS232**



- Very high signal stability on various surfaces
- Optional accessories: Mounting plate for quick and easy alignment
- IP67
- Laser class 2

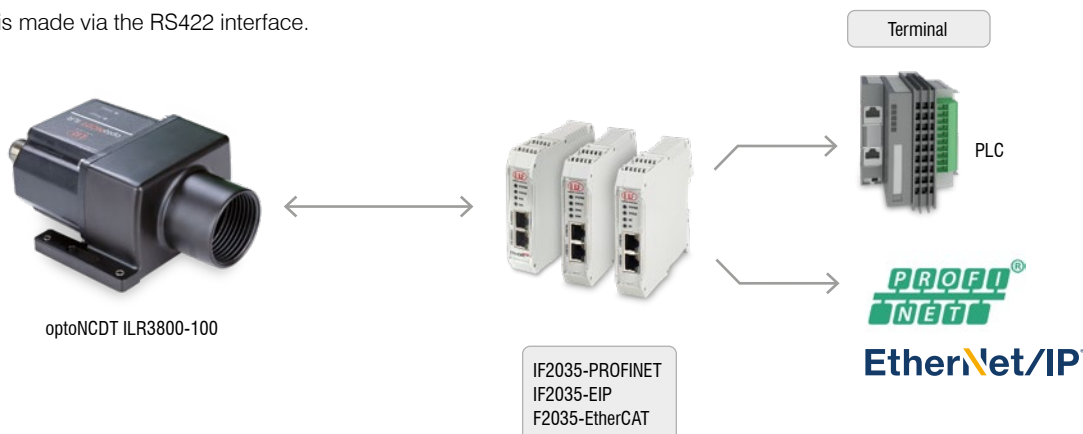
EtherNet/IP **EtherCAT**
PROFINET **Analog** **RS422**

- IP65
- Compatible with interface modules
- Integrated mounting plate
- Laser class 2

 **IO-Link**
inside

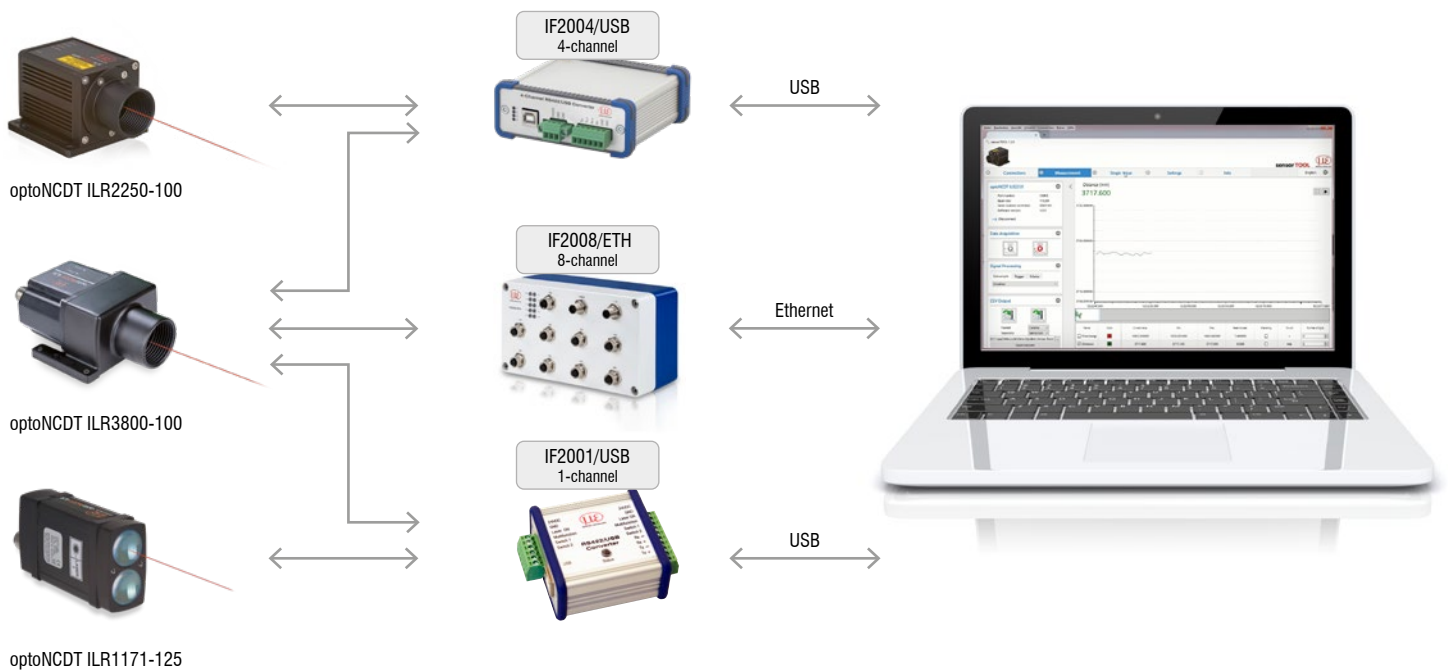
Industrial Ethernet Connection

The ILR3800-100 sensors can be easily connected to Industrial Ethernet controllers via the IF2035 interface module. The connection is made via the RS422 interface.



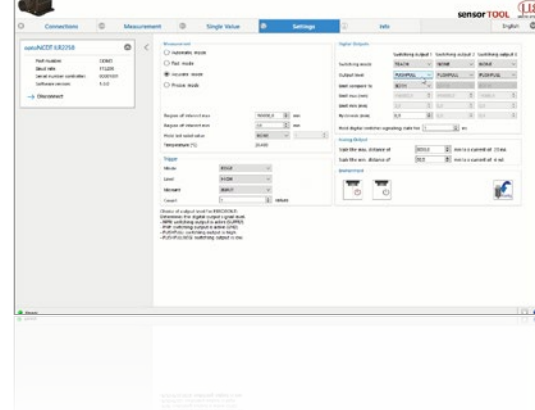
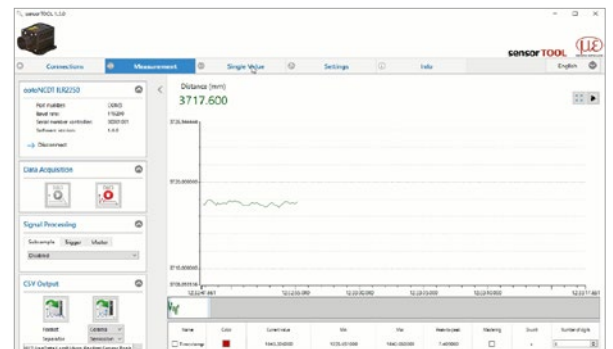
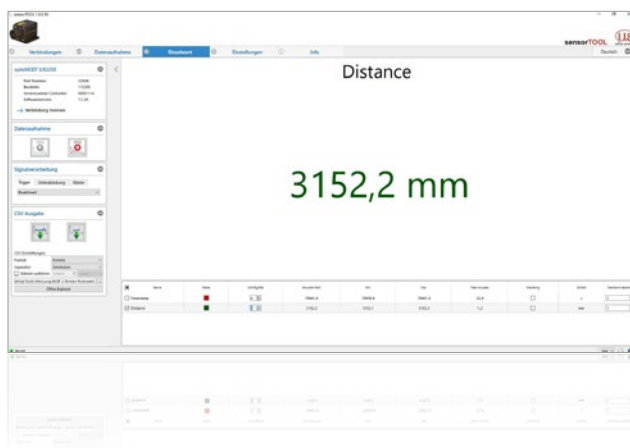
Parameter setting via sensorTOOL

The numerous interface modules allow the optoNCDT ILR2250-100, ILR3800-100 and ILR1171-125 sensors to be addressed and parameterized via the sensorTOOL. This sensorTOOL also displays and visualizes a measurement chart.



- Data display and scaling via Ethernet and sensorTOOL
- CSV export
- Easy integration without admin rights on PC

The sensorTOOL can be accessed directly via the IF2001/USB, the IF2004/USB and the IF2008/ETH. Besides the parameterization of the sensor, measured values can be displayed, saved and exported.



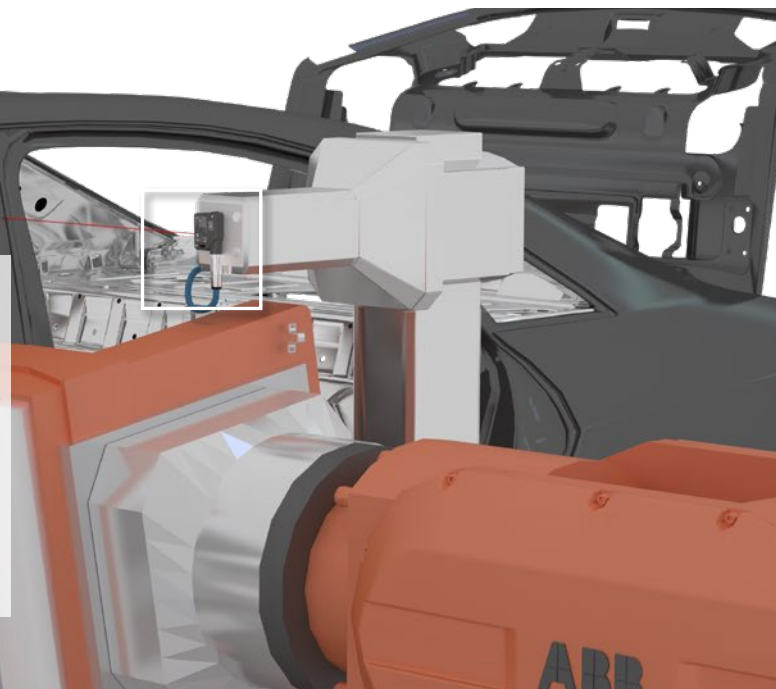
Measurement modes

- **AUTO mode:** For dark, reflective and distant targets - this measurement mode optimizes the measurement frequency of the sensor and therefore provides the best results, even in difficult conditions.
- **PRECISE mode:** For highest accuracy - this measurement mode provides precise distance values on well reflecting targets.
- **ACCURATE mode:** For high accuracy and tolerance in the event of distance changes.
- **FAST mode:** For fast measurements on moving objects and distance jumps - this measurement mode detects object movements up to 1.6 m/s.

Distance measurements in robot positioning tasks

Automated assembly of cockpits requires the exact positioning of the car bodies. A robot guides the cockpit into the vehicle between the A and B pillars. The correct position at which the car body should stop is determined by optoNCDT ILR1040 time-of-flight laser sensors. They are particularly suitable for these and other comparable applications due to their short response time. The sensor is located on the same side as the assembly robot.

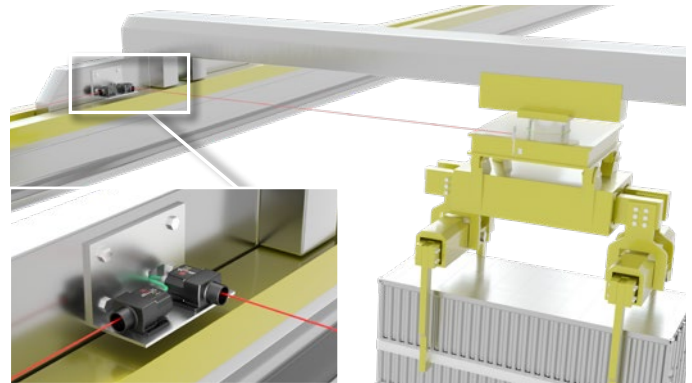
Sensor: optoNCDT ILR1040



Diameter measurement of coils

Steel strip coils are mainly used in the processing industry, e.g., the automotive industry. When unwinding the coils, the diameter is continuously monitored by the ILR2250-100-IO in order to be able to determine the changeover time of the coil at an early stage. The IO-Link interface allows for the sensor to be integrated into automation systems. This enables precise and wear-free control of the production process.

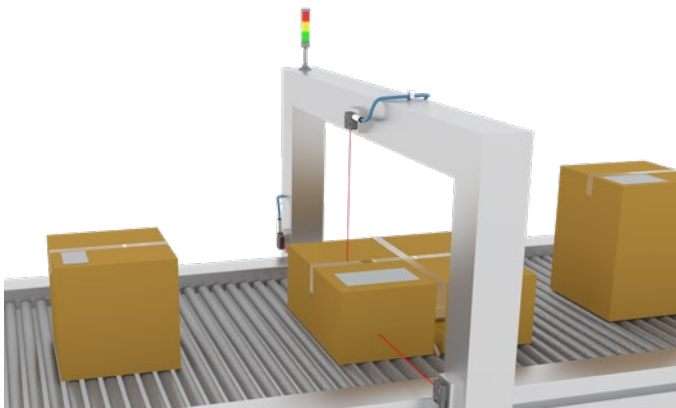
Sensor: optoNCDT ILR2250-100-IO



Position control of indoor cranes

Single girder overhead traveling cranes, double girder bridge cranes and overhead traveling cranes are used in almost every logistics and production plants. The control of the crane system is based on the measurement values of highly accurate ILR3800-100 laser distance sensors from Micro-Epsilon, which are designed for large distances as well as fast distance changes. One sensor detects the change in distance of the main girder, and the second the movement of the trolley.

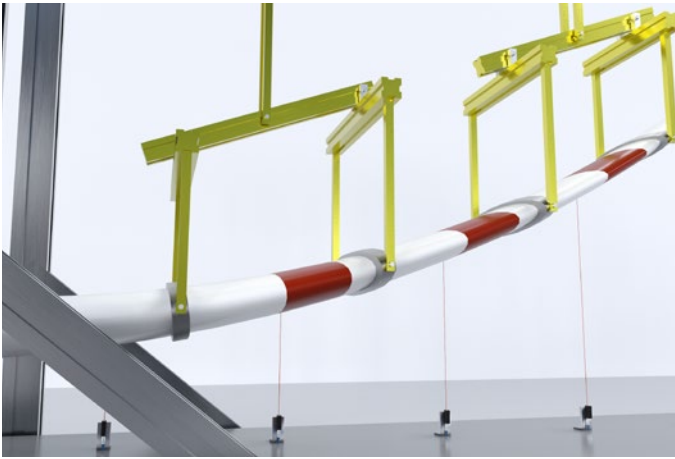
Sensor: optoNCDT ILR3800-100



Measurement and position detection of packages

Automation systems such as modern packaging machines require comprehensive information provided by the sensor technology directly from the machine. The detection of the exact position and size of the packages is carried out by the ILR1040 laser distance sensors from Micro-Epsilon. Thanks to laser class 1, they can be used directly without further protective measures. The short response time allows different testing and automation functions of the packaging machine.

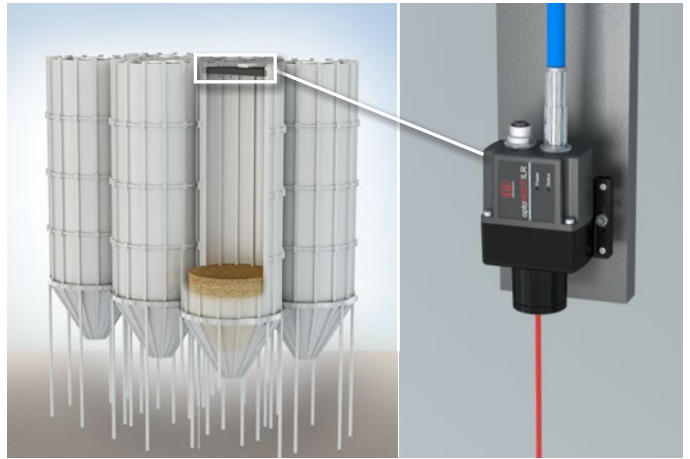
Sensor: optoNCDT ILR1040



Fatigue testing of rotor blades on wind turbines

Due to their growth in size and the increasing expansion of wind turbines, the demands on their technical reliability are also constantly increasing. Rotor blades are comprehensively tested and validated before commissioning. Several ILR1170-125 sensors detect the deformation of a rotor blade clamped in a test fixture, which is subjected to both static and dynamic loads.

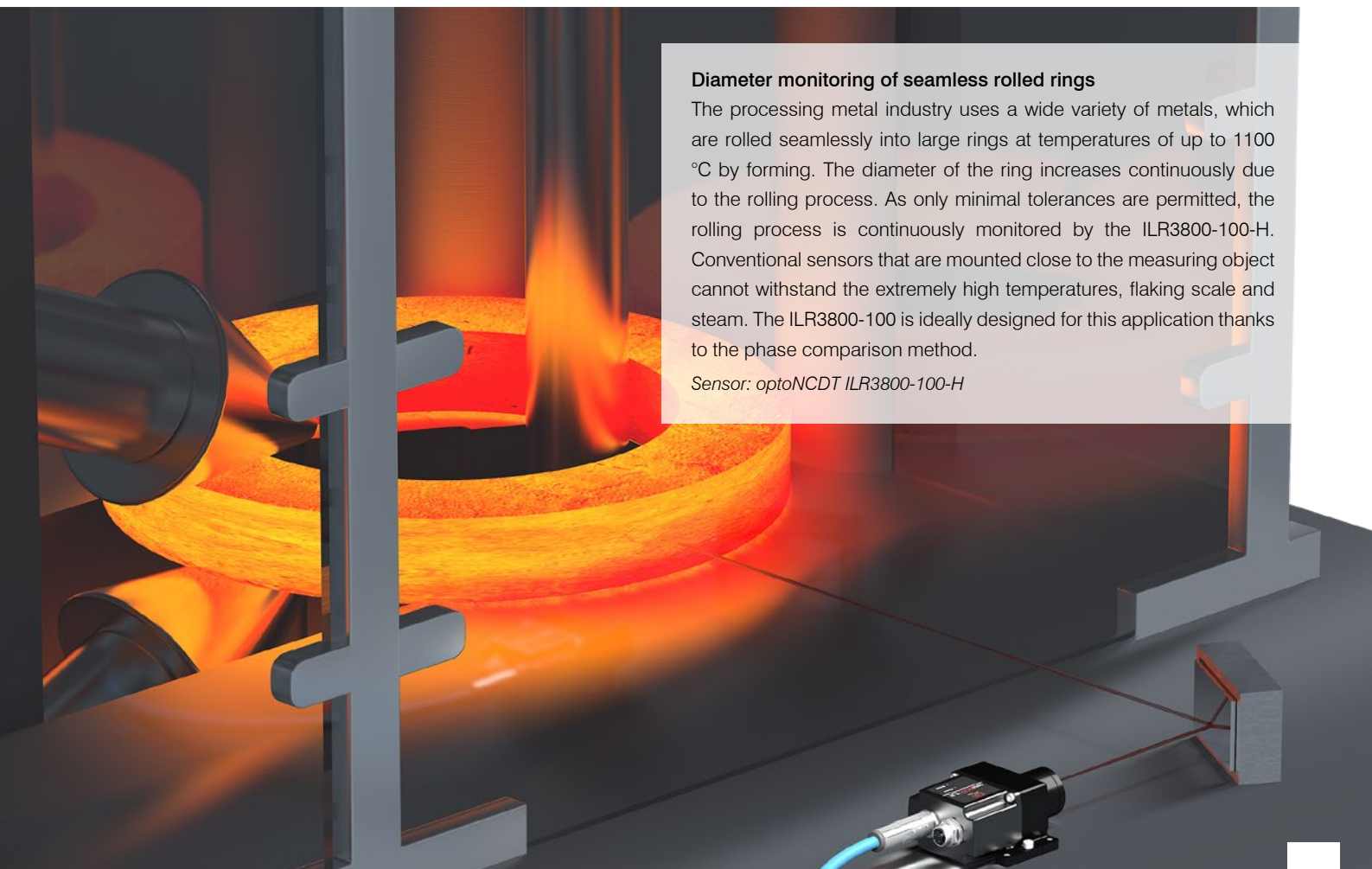
Sensor: *optoNCDT ILR1171-125*



Filling level measurement in silos

Laser distance sensors from Micro-Epsilon continuously detect the filling level in silos. For smooth production and logistics processes, precise quantity measurements at storage locations for bulk goods or plastic granulates, for example, is a decisive factor. The ILR3800-100-H sensors are mounted on the lid of the silo and measure continuously towards the silo bottom. This reliable and automated detection of filling levels avoids production downtimes due to missing material.

Sensor: *optoNCDT ILR3800-100-H*






Diameter monitoring of seamless rolled rings

The processing metal industry uses a wide variety of metals, which are rolled seamlessly into large rings at temperatures of up to 1100 °C by forming. The diameter of the ring increases continuously due to the rolling process. As only minimal tolerances are permitted, the rolling process is continuously monitored by the ILR3800-100-H. Conventional sensors that are mounted close to the measuring object cannot withstand the extremely high temperatures, flaking scale and steam. The ILR3800-100 is ideally designed for this application thanks to the phase comparison method.

Sensor: *optoNCDT ILR3800-100-H*

Compact and reliable laser distance sensor optoNCDT ILR104x

-  Measuring ranges 10 and 60 m (with reflector)
-  Ideal for series applications in the automation industry
-  Laser class 1
-  Robust design IP67 / IP69 / IP69K
-  Fast response time
-  Compact & lightweight design



Compact and reliable sensor

The optoNCDT ILR104x laser distance sensors are designed for industrial distance measurements. These sensors achieve measuring ranges up to 10 meters without reflector film and 60 meters with reflector film. They are characterized by a high protection class and resistance to ambient light. Due to their rotatable cable outlet and their compact design, these sensors can also be installed in difficult-to-access and narrow places.

The optoNCDT LR104x sensors can be put into operation quickly and easily via the IO-Link interface. Operation of the sensor is supported by keys and LEDs.

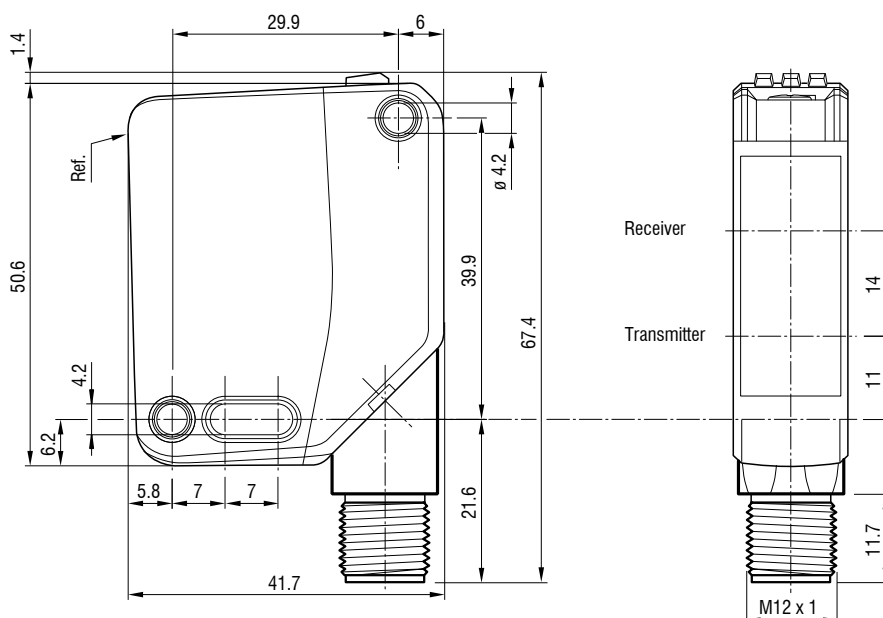
Time-of-flight principle

The ILR104x distance sensors use the time-of-flight measuring principle for accurate, reliable, clear and reproducible results. They achieve precise measurement results regardless of surface texture, dark object colors or ambient light. The ILR104x series sensors use a class 1 laser.

Versatile use

The compact sensors are designed for automation and are used for presence detection and collision monitoring, for example. Their robust plastic housing with IP69K protection class, the 50,000 lx ambient light resistance and a wide temperature range of -30 to +60 °C make these sensors the ideal choice for numerous applications.

Dimensions:



(dimensions in mm, not to scale)

Model		ILR1040-10-IO-I	ILR1040-10-IO-U	ILR1041-60-IO-I	ILR1041-60-IO-U
Measuring range	Start of measuring range	0.03 m	0.03 m	-	-
	End of measuring range	10 m	10 m	-	-
	Start of measuring range with reflector film ILR-RF250	-	-	0.2 m	0.2 m
	End of measuring range with reflector film ILR-RF250	-	-	60 m	60 m
Measuring rate ^[1] ^[2]		adjustable up to 333 Hz			
Max. travel speed		10 m/s			
Resolution		1 mm			
Linearity ^[3]		typ. ± 20 mm			
Repeatability ^[4]		<3 mm			
Temperature stability		≤ 0.25 mm / °K			
Light source		Semiconductor laser < 1 mW, 660 nm (red) 2mrad 4ns			
Laser class		Class 1 in accordance with DIN EN 60825-1:2014			
Typ. service life		85.000 h			
Permissible ambient light		50,000 lx @ 2.5 m standard white 90 %, 10,000 lx @ 2.5 m black 6 %			
Supply voltage		18 ... 30 VDC			
Power consumption		25 mA			
Digital interface		IO-Link 1.1 (via C/Q pin 4)			
Analog output		4 ... 20 mA (12 Bit DA)	0 ... 10 V (12 bit DA)	4 ... 20 mA (12 Bit DA)	0 ... 10 V (12 bit DA)
Switching output		Q1 (max 100 mA) push-pull output (configurable) reverse polarity protected, overvoltage-proof			
Connection		Supply & signal: M12 x1 , 4-pin			
Mounting		Through bores			
Temperature range	Storage	-40 ... +75 °C			
	Operation	-30 ... +60 °C			
Protection class (DIN EN 60529)		IP67 / IP69 / IP69K			
Material		PC (polycarbonate)			
Weight		37 g			
Control and indicator elements		3x LED for power, switching status and teach-in; 5-position rotary switch for selecting the operating modes; teach-in button			
Special features		Operating mode: single measurement, external triggering, distance tracking, continuous measurement			

^[1] The specified data apply for a consistent room temperature of 20 °C, sensor is continuously in operation. Measured on white, diffuse reflecting surface (reference ceramic)

^[2] Depends on the reflectivity of the target, ambient light interference and atmospheric conditions

^[3] Statistical spread 2σ

^[4] Measurement frequency of 20 Hz, moving average 10

Light spot diameter



The ILR104x sensors use a semiconductor laser of class 1.







Devices of this laser class require no special safety precautions.

They work with a semi-conductor laser with a wavelength of 660 nm (visible/red)

Laser power is <1 mW.

High-performance laser distance sensor for industrial applications

optoNCDT ILR2250-100

-  Large measuring range up to 100 m (150 m with reflector)
-  Ideal for OEM serial integration
-  Laser class 2
-  Highest signal stability on numerous surfaces
-  Compact & lightweight design
-  IO-Link



With the optoNCDT ILR2250-100, Micro-Epsilon presents a new powerful laser distance sensor. The sensor is designed for operation with or without reflector film, which is used depending on the distance and ambient conditions. The sensor measures large distances up to 100 m without contact and provides best results even on challenging (dark, structured or weakly reflecting) surfaces. The measuring range can be extended up to 150 m by attaching a reflector film to the measuring object.

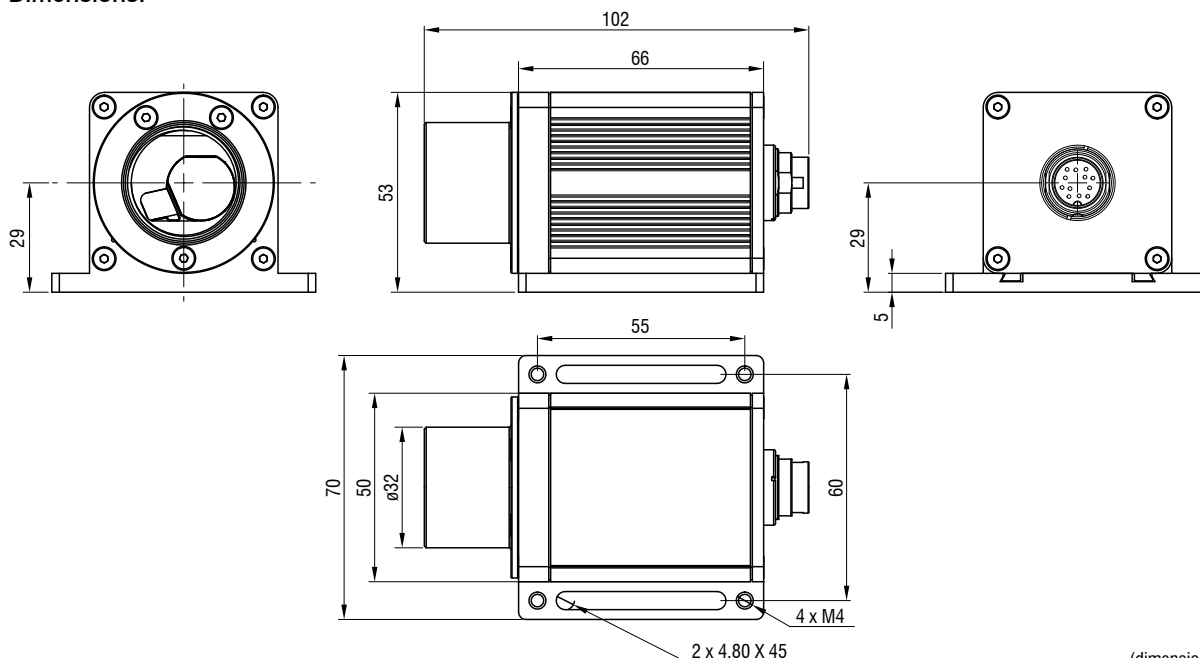
Thanks to the integrated AUTO measurement mode, precise and reliable measurements can be made even on dark, partially reflecting and distant targets. A simple and fast alignment of the sensor is made possible by the integrated mounting plate with 4 set screws.

The ILR2250-100 laser distance sensors provide reliable results even under harsh conditions. They are protected against dust and splashes of water thanks to the robust design in an IP65 certified die-cast aluminum housing. Compact size combined with low weight opens up new fields of application particularly in factory and plant automation, as well as in drone applications for distance measurement from the air.

ILR2250-100-IO with IO-Link

The ILR2250-100-IO model has an IO-Link interface. The IO-Link communication standard simplifies data communication while reducing the commissioning time of the sensor.

Dimensions:



(dimensions in mm, not to scale)

Model		ILR2250-100-IO	
Article number		7112016	
Measuring range ¹⁾		SMR	EMR
	Black 6 %	0.05	30 m
	Gray 40 %	0.05	70 m
	White 80 %	0.05	100 m
	Reflector film ²⁾	35	150 m
Measuring rate		20 Hz	
Resolution		0.1 mm	
Linearity		< ±1 mm ³⁾	
Repeatability ⁴⁾		<300µm	
Temperature compensation		-10 ... +50 °C	
Light source		Semiconductor laser < 1 mW, 655 nm (red)	
Typ. service life		50,000 h	
Laser class		Class 2 in accordance with DIN EN 60825-1: 2015-07	
Permissible ambient light		50,000 lx	
Supply voltage		10 ... 30 VDC	
Power consumption		< 1.5 W (24 V)	
Signal input		-	
Digital interface		IO-Link 1.1; process data, parameter set up and diagnostics	
Analog output		-	
Switching output		Q1 / Q2 / Q3 (configurable) included in IO-Link process data	
Connection		Supply/signal: 5-pin M12 screw/plug connection (see accessories for connection cable)	
Mounting		Screwing and adjustment on sensor base plate	
Temperature range	Storage	-25 ... +70 °C (non-condensing)	
	Operation	-10 ... +50 °C (non-condensing)	
Shock (DIN EN 60068-2-29)		15 g / 6 ms in 3 axes, in 3 directions, 1000 shocks each	
Vibration (DIN EN 60068-2-6)		15 g / 10 ... 500 Hz in 3 axes, 10 cycles each	
Protection class (DIN EN 60529)		IP65	
Material		Aluminum housing	
Weight		approx. 265 g	
Control and indicator elements		5x LEDs for power, signal strength and switching outputs	
Special features		4 measurement-specific operating modes via IO-Link	

SMR = Start of measuring range, EMR = End of measuring range

The specified data apply for a consistent room temperature of 20 °C, sensor is continuously in operation. Measured on white, diffuse reflecting surface (reference ceramic)

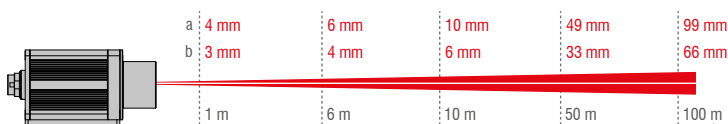
¹⁾ Depends on target reflectivity, ambient light influences and atmospheric conditions

²⁾ ILR-RF210 reflector film 210 x 297 mm; article no: 7966058

³⁾ Measured in the range of 0.05 ... 20 m; statistical spread 2σ

⁴⁾ Measurement frequency of 20 Hz, moving average 10








Oval light spot diameter



The ILR2250 sensor works with a semiconductor laser at a wavelength of 655 nm (visible/red). Laser power is <1 mW. The sensors fall within laser class 2. Devices of this laser class require no special safety precautions.

High-performance laser distance sensor for industrial applications

optoNCDT ILR3800-100

-  Large measuring range up to 100 m (150 m with reflector)
-  Ideal for OEM serial integration
-  Laser class 2
-  Highest signal stability on numerous surfaces
-  Compact & lightweight design
-  **INTERFACE** Analog / USB / RS422 / PROFINET / EtherNet/IP
-  Optionally with integrated heating for outdoor applications



With the optoNCDT ILR3800-100, Micro-Epsilon presents a new powerful laser distance sensor. The sensor is designed for operation with or without reflector film, which is used depending on the distance and ambient conditions.

The sensor measures large distances up to 100 m without contact and provides best results even on challenging (dark, structured or weakly reflecting) surfaces. The measuring range can be extended up to 150 m by attaching a reflector film to the measuring object.

Thanks to the integrated AUTO measuring mode, even dark, partially reflective and distant targets can be detected precisely and reliably. A simple and fast alignment of the sensor is made possible by the integrated mounting plate with 4 set screws.

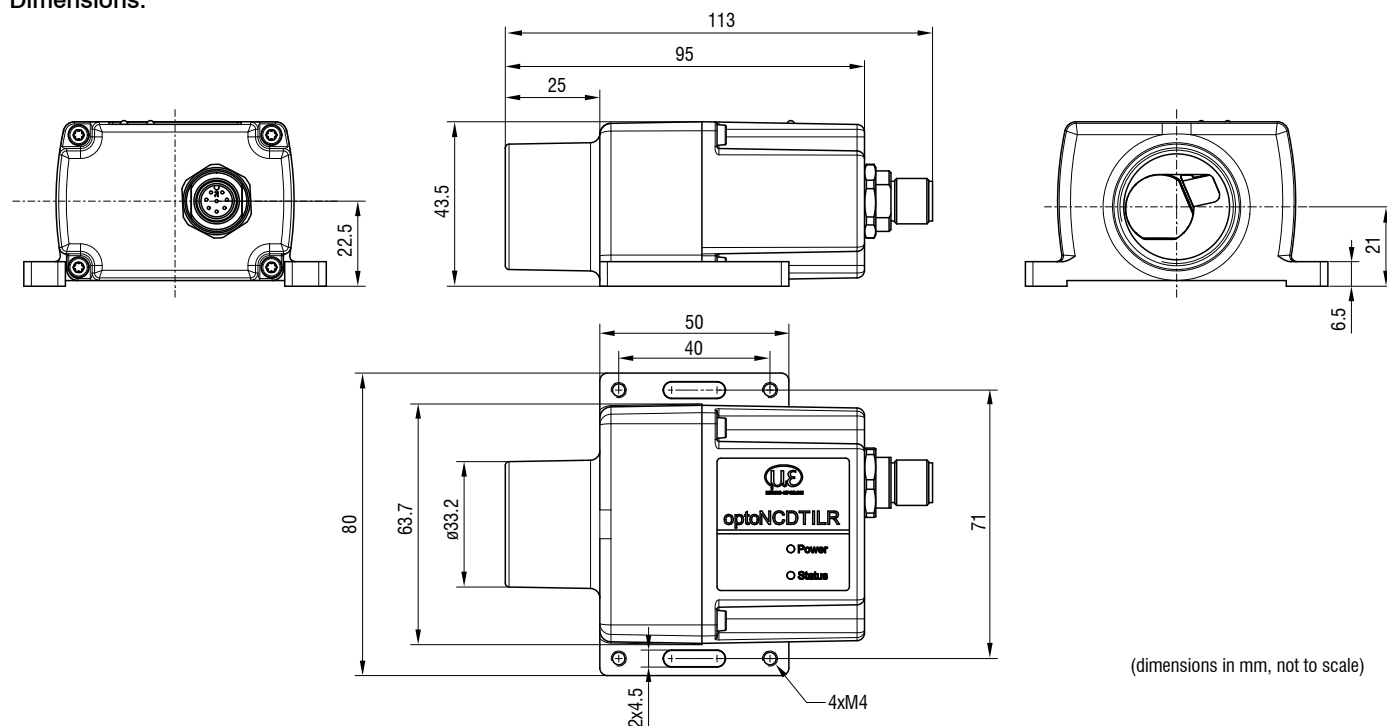
The ILR3800-100 sensors provide reliable results even under harsh conditions. They are protected against dust and splash water thanks to the robust design in the IP67-certified aluminum housing.

Compact size combined with low weight opens up new fields of application particularly in factory and plant automation, as well as in drone applications for distance measurement from the air.

ILR3800-100-H with integrated heating

The ILR3800-100-H option has an integrated heating and cooling element that enables operation in the temperature range of -40 to +55 °C. This allows the sensors to be used permanently outdoors.

Dimensions:



Model			ILR3800-100		ILR3800-100-H	
Measuring range ^[1]	Black 6 %	Start of measuring range	0.05 m			
		End of measuring range	30 m			
	Gray 40 %	Start of measuring range	0.05 m			
		End of measuring range	70 m			
	White 80 %	Start of measuring range	0.05 m			
		End of measuring range	100 m			
	Reflector film	Start of measuring range	35 m			
		End of measuring range	150 m			
Measuring rate			20 Hz			
Resolution			0.1 mm			
Linearity			< ± 1mm ^[2]			
Repeatability ^[3]			< 300 µm			
Temperature compensation			-10 ... +50 °C		-40 ... +55 °C	
Light source			Semiconductor laser < 1 mW, 655 nm (red)			
Typ. service life			50,000 h			
Laser class			Class 2 in accordance with DIN EN 60825-1: 2022-07			
Permissible ambient light			50,000 lx			
Supply voltage			10 ... 30 VDC		24 ... 30 VDC	
Power consumption			< 1.5 W (24 V)		< 10 W (24 V)	
Signal input			Trigger			
Digital interface			RS422 / USB/ PROFINET/ EtherNet/IP ^[4]			
Analog output			4 ... 20 mA (16 bit, freely scalable within the measuring range)			
Connections			Supply/signal: M12 screw/plug connection 8-pin A-coded			
Mounting			Screwing and adjustment on sensor base plate			
Temperature range		Storage	-25 ... +70 °C (non-condensing)			
		Operation	-10 ... +50 °C (non-condensing)		-40 ... +55 °C (non-condensing)	
Shock (DIN EN 60068-2-29)			15 g / 6 ms in 3 axes, in 3 directions, 1000 shocks each			
Vibration (DIN EN 60068-2-6)			15 g / 10 ... 500 Hz in 3 axes, 10 cycles each			
Protection class (DIN EN 60529)			IP67			
Material			Aluminum housing and plastic cap			
Weight			207 g		217 g	
Control and indicator elements			2x LED for power, signal strength = status			

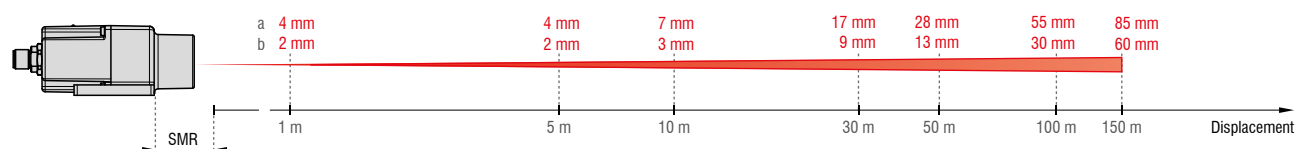
^[1] Depends on target reflectivity, ambient light influences and atmospheric conditions

^[2] Measured in the range of 0.05 ... 20 m; statistical spread 2σ

^[3] Measurement frequency of 20 Hz, moving average 10

^[4] Connection via interface module (see accessories)







Oval light spot diameter



The ILR3800-100 sensor works with a semiconductor laser at a wavelength of 655 nm (visible/red). Laser power is <1 mW. The sensors fall within laser class 2. Devices of this laser class require no special safety precautions.

High speed sensor for outdoor applications

optoNCDT ILR1171-125

-  Measuring range up to 125 m, (with reflector 270 m)
-  Distance and speed measurements
-  Laser class 1
-  Robust design IP67
-  Very high measuring rate for fast applications
-  Optionally with integrated heating for outdoor applications



The optoNCDT ILR1171 is a laser-based distance sensor for non-contact and precise distance and displacement measurements from 0.2 m up to 125 m. The measuring range can be extended to 270 m with a reflector film. The sensor is designed for very large measuring ranges, with and without reflector. Due to the very high measuring rate of the sensor, moving objects can be measured easily. Even in poor visibility conditions, the ILR1171-125 impresses with its high signal intensity for stable measurements.

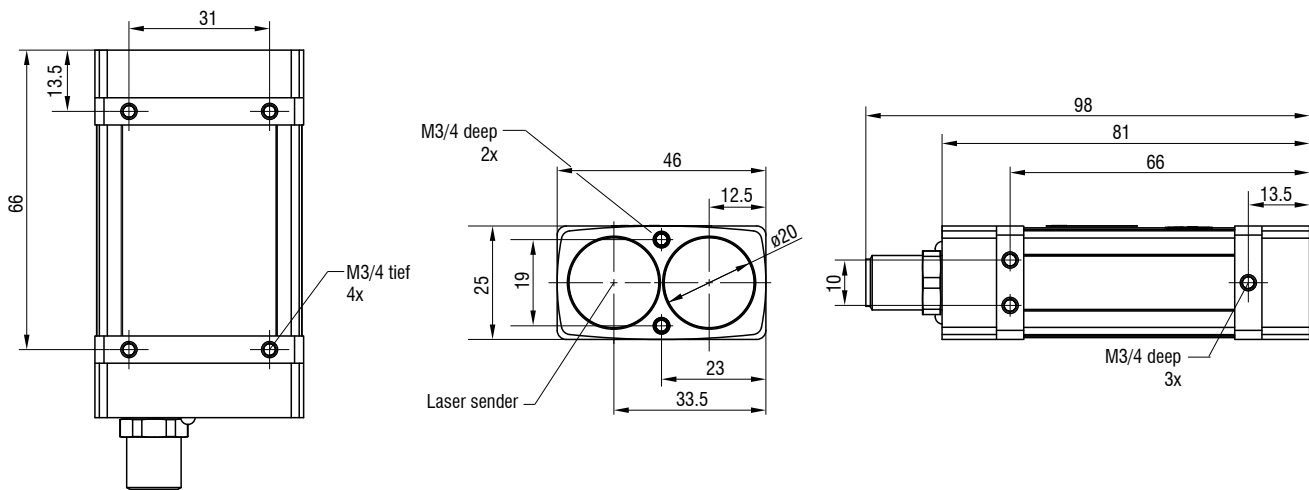
Versatile fields of application

The optoNCDT ILR1171-125 is fitted with an integrated heater for outdoor use. A pilot laser is also integrated for mounting and adjustment. This makes it easier to align the sensor over long distances, for example when monitoring buildings. The RS422 and RS485 interfaces ensure reliable and fast data transmission.

Time-of-flight principle

The sensor operates according to the laser pulse runtime principle and is therefore particularly well suited to applications with large distances. Commissioning of the sensor is straightforward due to a variety of interfaces and easy installation options. The actual measuring range depends on the reflectivity and the surface quality of the object to be measured.

Dimensions:



(dimensions in mm, not to scale)

Model		ILR1171-125
Article number		7112027
Measuring range ^[1]	Black 10 %	70 m
	Gray 40 %	100 m
	White 80 %	125 m
	Reflector film ^[2]	270 m
Start of measuring range		0.2 m ^[3]
Measuring rate		40 kHz
Resolution		1 mm
Linearity		< ±60 mm ^[4]
Repeatability ^[5]		<25 mm
Temperature stability		< 20 ppm / K
Light source		Semiconductor laser < 1 mW, 905 nm (red)
Laser class		Class 1 in accordance with IEC 60825-1: 2022-07
Permissible ambient light		50,000 lx
Supply voltage		10 ... 30 VDC
Power consumption		< 3 W (24 V)
Signal input		Trigger
Digital interface		RS232 / RS422
Analog output		4 ... 20 mA (16 bit, freely scalable within the measuring range)
Switching output		Q1 / Q2 (configurable); trigger
Connection		Supply/signal: 12 pin M12 screw/plug connection
Mounting		Mounting holes
Temperature range	Storage	-40 ... +70 °C (non-condensing)
	Operation	-20 ... +60 °C (non-condensing)
Shock (DIN EN 60068-2-29)		30 g / 6 ms in 6 directions, 3 shocks each
Vibration (DIN EN 60068-2-6)		1 g / 10 ... 2000 Hz in 3 axes, 2 cycles each
Protection class (DIN EN 60529)		IP67
Material		Aluminum housing
Weight		approx. 140 g
Control and indicator elements		2x LEDs for power and signal
Special features		Measurement-specific operating modes

^[1] Depends on the reflectivity of the target, ambient light interference and atmospheric conditions

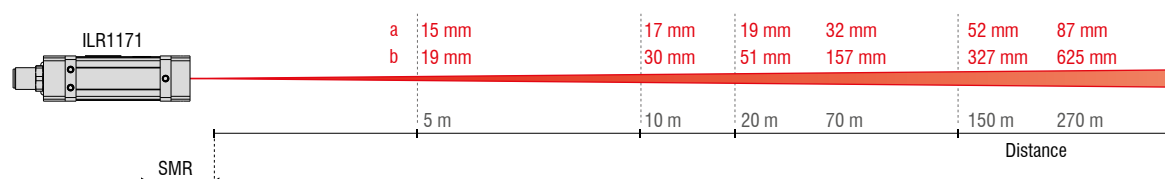
^[2] ILR-RF250 reflector film 250 x 250 mm; art. 7966001

^[3] 0.5 m for measurement with reflector film

^[4] Linearity in the ranges of ≤ 1 m and ≥ 70 m is ±100 mm

^[5] Repeatability in the ranges ≤ 1 m and ≥ 70 m is ±50 mm

Light spot diameter



The optoNCDT ILR 1171 sensors use a semiconductor class 1 laser (operating mode) and a semiconductor class 2 laser (setup mode). Devices of this laser classes require no special safety precautions.

Connection possibilities optoNCDT ILR



ILR104x



Supply and output cables

29011586	PC1040-10	Supply-/output cable, 10 m
29011587	PC1040-2	Supply-/output cable, 2 m
29011588	PC1040/90-2	Supply-/output cable, 2 m
29011589	PC1040-5	Supply-/output cable, 5 m
29011590	PC1040/90-5	Supply-/output cable, 5 m
29011590	PC1040-10	Supply-/output cable, 10 m
29011591	PC1040/90-10	Supply-/output cable, 10 m
29011592	PC1040-20	Supply-/output cable, 20 m
29011593	PC1040/90-20	Supply-/output cable, 20 m



ILR2250-100-IO



Supply and output cables

29011362	PC2250-5 IO-Link	Supply-/output cable, 5 m
29011363	PC2250-10 IO-Link	Supply-/output cable, 10 m
29011364	PC2250-15 IO-Link	Supply-/output cable, 15 m



ILR3800-100
ILR3800-100-H



Supply and output cables

29011609	PCF3800-30/IF2004	Supply-/output cable, 30 m
----------	-------------------	----------------------------

(The IF2008-Y adapter cable is required to connect 4x ILR sensors to the IF2004).

Connection cables

29011624	PCE3800-20/IF2008ETH	Connection cable, 20 m
29011623	PCE3800-10/IF2008ETH	Y-connection cable, 10 m
29011622	PCE3800-10/IF2008ETH	Connection cable, 10 m
29011621	PCE3800-5/IF2008ETH	Connection cable, 5 m
29011620	PCE3800-2/IF2008ETH	Connection cable, 2 m



Power supply unit PS2020
(Optional for DIN rail
mounting)



Supply and output cables

29011513	PC3800-2	Supply-/output cable, 2 m
29011514	PC3800/90-2	Supply-/output cable, 2 m
29011515	PC3800-5	Supply-/output cable, 5 m
29011516	PC3800/90-5	Supply-/output cable, 5 m
29011517	PC3800-10	Supply-/output cable, 10 m
29011518	PC3800/90-10	Supply-/output cable, 10 m
29011519	PC3800-20	Supply-/output cable, 20 m
29011520	PC3800/90-20	Supply-/output cable, 20 m
29011521	PC3800-30	Supply-/output cable, 30 m
29011522	PC3800/90-30	Supply-/output cable, 30 m

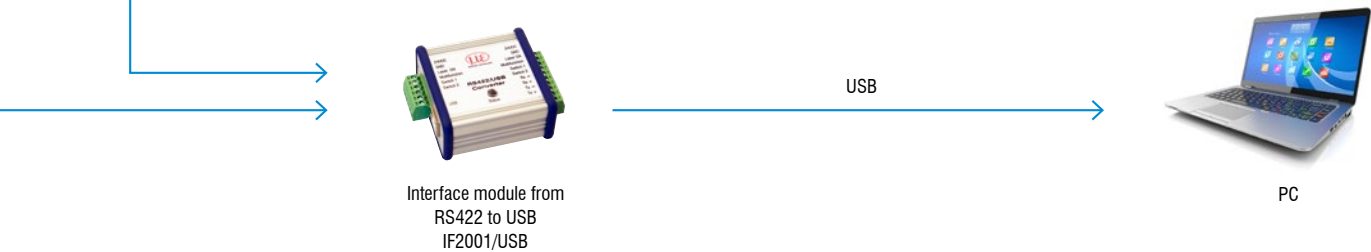
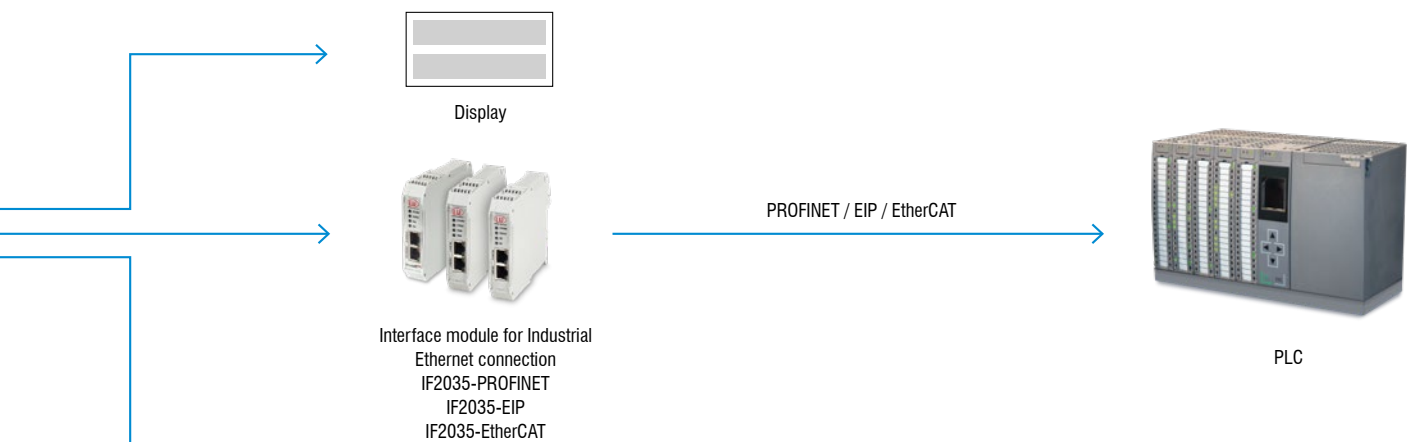
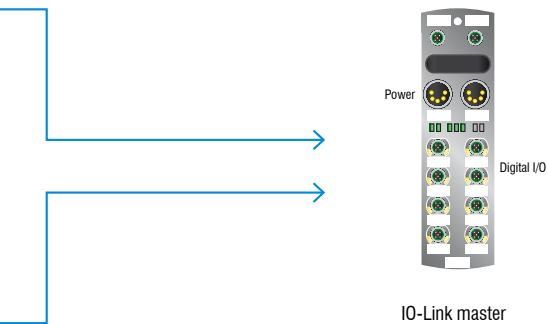


ILR1171



Supply and output cables

29011401	PC1171-2	Supply-/output cable, 2 m
29011402	PC1171-5	Supply-/output cable, 5 m
29011403	PC1171-10	Supply-/output cable, 10 m



Optional accessories

optoNCDT ILR

Reflector film

The sensor measures the distance to moving and stationary objects. The measurable distance can be increased by using a reflective film suitable for the sensor. However, the minimum distance from the sensor to the reflector film must be maintained. The center of the laser spot must be in the center of the reflector over the entire measuring range. Target (reflector) and sensor can only be tilted by at most 5° relative to one another.

Sensor	Item	Dimensions
optoNCDT ILR140x	Art. no.: 7966001 ILR-RF250 Reflector film	250 x 250 mm
optoNCDT ILR2250	Art. no.: 7966058 ILR-RF210 Reflector film	210 x 297 mm
optoNCDT ILR3800	Art. no.: 7966058 ILR-RF210 Reflector film	210 x 297 mm
optoNCDT ILR1171	Art. no.: 7966001 ILR-RF250 Reflector film	250 x 250 mm



Protective glass

The sensor can be protected from external influences by using a protective glass.

Sensor	Item	Description
optoNCDT ILR2250	Art. no.: 7966061 ILR-PG2250 Protective glass	Optical glass, with anti-reflection coating and high transmission
optoNCDT ILR3800	Art. no.: 7966080 ILR-PG3800 Protective glass	



Filter glass

Filter glasses enable measurement on highly reflective surfaces. However, this reduces the maximum laser power. Ask your regional sales contact before you use the filter glass.

Sensor	Item	Description
optoNCDT ILR2250	Art. no.: 7966063 ILR-NDF2250 Filter glass 0.75	Optical gray filter
	Art. no.: 7966066 ILR-NDF2250 Filter glass 0.5	
	Art. no.: 7966068 ILR-NDF2250 Filter glass 0.9	
optoNCDT ILR3800	Art. no.: 7966081 ILR-NDF3800 Filter glass 0.75	
	Art. no.: 7966082 ILR-NDF3800 Filter glass 0.5	
	Art. no.: 7966083 ILR-NDF3800 Filter glass 0.9	



Air purge collar

A compressed-air purge collar reliably prevents the deposition of dust and particles on the lens surface, ensuring that the optical performance remains consistently high. In addition, this reduces the cleaning effort and extends the service life of the system.

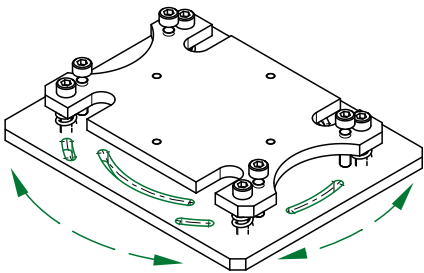
Sensor	Item	Description
optoNCDT ILR2250	Art. no.: 7966062 ILR-FBV2250 Air purge collar	Screwable compressed-air purge collar for cleaning the optical path
optoNCDT ILR3800	Art. no.: 7966087 ILR-FBV3800 Air purge collar	



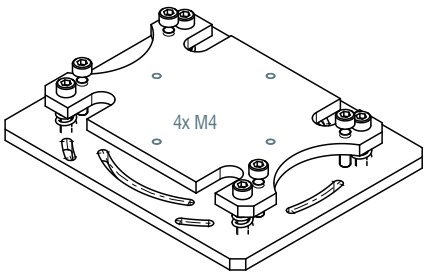
Mounting plate

The sensor can optionally be fixed using an aluminum plate for mounting. This ensures a secure hold and easy alignment of the sensor. Its robust design is suitable even for harsh industrial environments.

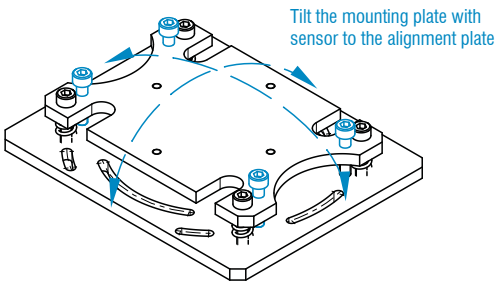
Sensor	Item	Description
optoNCDT ILR3800	Art. no.: 7966076 ILR-MP3800 Mounting plate	Optional; for easy sensor mounting



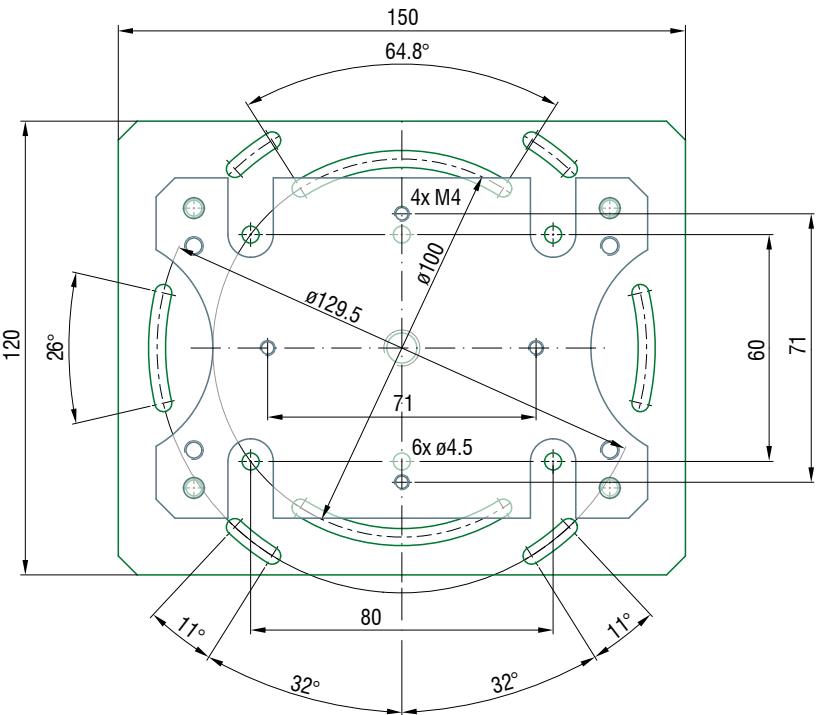
The sensor can optionally be mounted using a mounting plate.



4 mounting threads M4 for sensor mounting, optional: sensor rotated by 90°.



Tilt the mounting plate with sensor to the alignment plate



(dimensions in mm, not to scale)

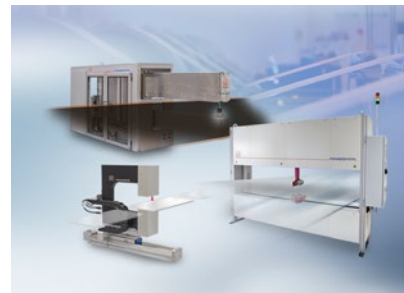
Sensors and Systems from Micro-Epsilon



Sensors and systems for displacement, distance and position



Sensors and measurement devices for non-contact temperature measurement



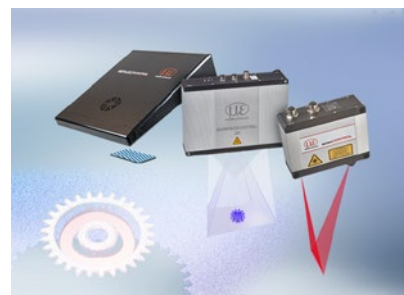
Measuring and inspection systems for metal strips, plastics and rubber



Optical micrometers and fiber optics, measuring and test amplifiers



Color recognition sensors, LED analyzers and inline color spectrometers



3D measurement technology for dimensional testing and surface inspection