

More Precision

optoNCDT ILR3800-100 // Laser distance sensor



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





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 laser distance 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.

New: 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.





Diameter measurement of rings during rolling

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 <i>µ</i> m	
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 Operation		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 2 σ

^[3] Measurement frequency of 20 Hz, moving average 10 ^[4]Connection via interface module (see accessories)



Oval light spot diameter ILR3800-100



The sensors fall within laser class 2. Devices of this laser class require no special safety precautions.

Dimensions



(dimensions in mm, not to scale)



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