MICRO-EPSILON

Laser Triangulation Displacement Sensors

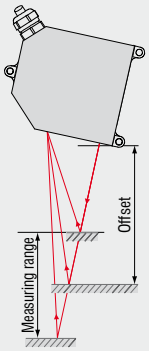
- Precise measurement of direct reflecting surfaces (glass and mirror)
- Three models with measuring ranges from 2mm to 20mm
- Compact design with integrated controller
- RTSC Real Time Surface Compensation
- Adjustable measuring rate up to 2.5kHz
- Analog Digital Analogue (U/I) and digital output
- Filter inside Adjustable filter functions (firmware)
- High flex cables for dragchain or robot use
- Certified Calibration certificate included
- //www. Configuration via software www.micro-epsilon.com/download

Specular Model for direct reflecting targets (glass and mirror)

optoNCDT 1700DR is designed for use with direct reflective materials, such as mirrored surfaces that are traditionally difficult to measure with laser technology. The sensor compensates for the high intensity of the reflected light by using patented, high speed software algorithms that dramatically reduce signal noise. The unit size is identical to the standard optoNCDT 1700 series and is therefore ideal for use in small areas (mounting device included).

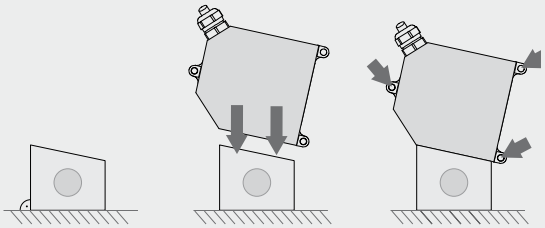
A different tilt angle is necessary for each sensor depending on the measuring range. Therefore, mounting stencils for easy alignment of the sensors to the target are included as standard.

Mounting direct reflection
(tilt tolerance <0.1°)



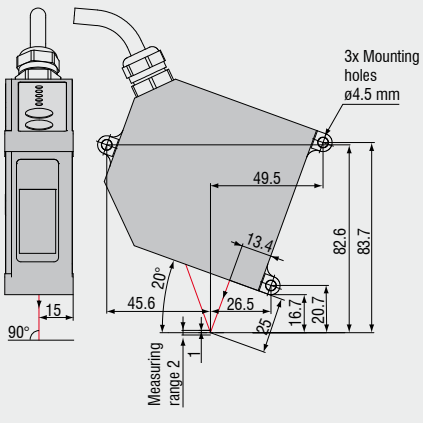
Mirror-like surface

Precision alignment accessory
(Mounting device included with delivery)

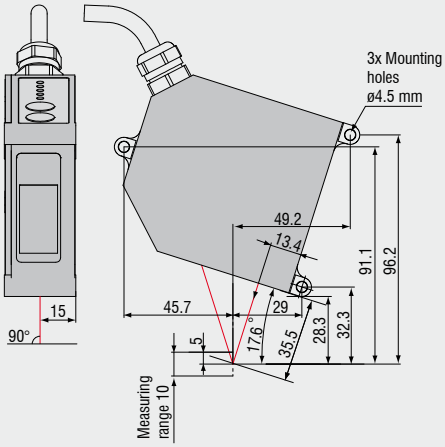


① Mounting the alignment ② Orientation of the sensor ③ Fixing the sensor

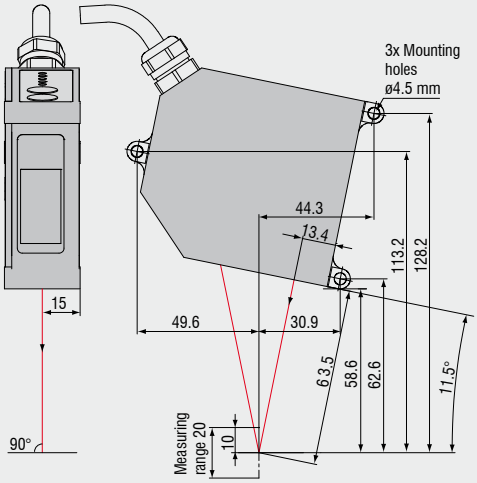
optoNCDT 1700DR (2mm)



optoNCDT 1700DR (10mm)



optoNCDT 1700DR (20mm)



(Dimensions in mm, not to scale. All CAD files are available online.)

Model		ILD1700-2DR	ILD1700-10DR	ILD1700-20DR
Measuring range		2mm	10mm	20mm
Start, mid, end of measuring range		see engineering drawing		
Linearity		2µm ≤0.1% FSO	10µm	40µm ≤0.2% FSO
Resolution (at 2.5kHz without averaging)		0.1µm	0.5µm	3µm
Measuring rate		2.5kHz / 1.25kHz / 625Hz / 312.5Hz (adjustable)		
Light source		semiconductor laser <1mW, 670nm (red)		
Permissable ambient light		10,000lx (at 2.5kHz)		
Laser safety class		class 2 acc. DIN EN 60825-1 : 2001-11		
Spot diameter	SMR	80µm	110µm	320µm
	MMR	35µm	50µm	45µm
	EMR	80µm	110µm	320µm
Temperature stability		0.025 % FSO/°C	0.01 % FSO/°C (based on digital output)	
Operation temperature		0 … +50°C		
Storage temperature		-20 … +70°C		
Output	measurements	selectable: 4 ... 20mA / 0 ... 10V / RS 422 / USB (option with cable PC1700-3/USB)		
	switching outputs	1 x error or 2 x limit (each pogrammable)		
Switch input		laser ON-OFF / zero		
Operation		via touch screen on sensor or via PC with ILD 1700 tool		
Power supply		24VDC (11 ... 30VDC), max. 150mA		
Electromagnetic compatibility (EMC)		EN 61000-6-3; EN 61000-6-2		
Sensor cable length (with connector)		0.25m (integrated cable with connector) option: 3m or 10m		
Synchronisation		possible for simultaneous or alternating measurements		
Protection class		IP 65		
Vibration		2g / 20 ... 500Hz		
Shock		15g / 6ms		
Weight (with 0.25m cable)		~ 550g		

FSO = Full Scale Output All specifications are valid for polished and planar surfaces.
SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

Custom Sensor Modifications

For applications where the above standard sensors do not meet your requirements, it may be possible to supply a sensor with modified specification. Please contact us for further information.

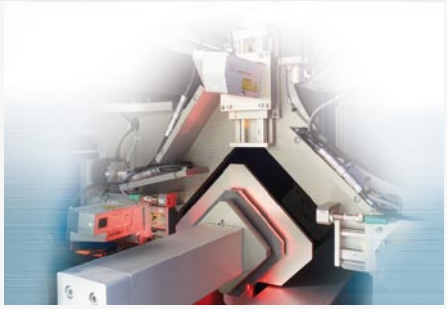
Options

- Non standard measuring range and stand off
- Custom housing or mounting geometry
- Non standard signal interfaces
- Special cable length of electrical connector
- 90° beam deflection
- Vacuum suitability
- Reduced mass
- Increased shock and vibration resistance

High performance sensors made by Micro-Epsilon

Sensors and systems for displacement, position and dimension
Eddy current sensors
Optical and laser sensors
Capacitive sensors
Inductive sensors
Draw-wire sensors
Optical micrometers
2D/3D profile sensors
Image processing

Sensors and measurement devices for non-contact temperature sensors
Online instruments
Handheld devices



Measuring systems for quality control
for plastic and film
for tire and rubber
for web material
for automotive components
for glass

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