



Laser Triangulation Displacement Sensors





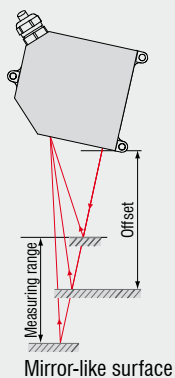
	Precise measurement of direct reflecting surfaces (glass and mirror)
	Three models with measuring ranges from 2mm to 20mm
	Compact design with integrated controller
RTSC	Real Time Surface Compensation
	Adjustable measuring rate up to 2.5kHz
	Analogue (U/I) and digital output
	Adjustable filter functions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

Specular Model for direct reflecting targets (glass and mirror)

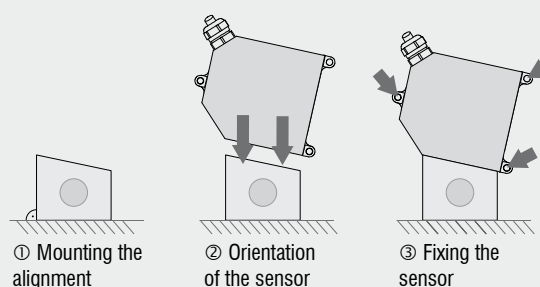
optoNCDT 1700DR is designed for use with direct reflective materials, such as mirrored surfaces that are traditionally difficult to measure with laser technology. The sensor compensates for the high intensity of the reflected light by using patented, high speed software algorithms that dramatically reduce 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.

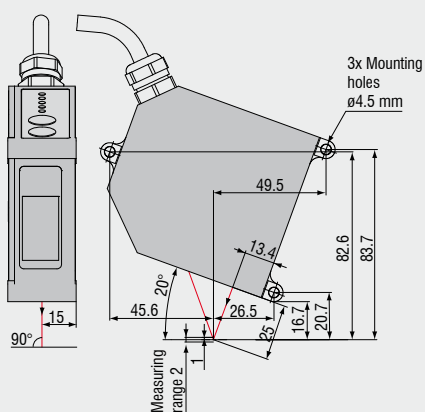
Mounting direct reflection (tilt tolerance <0.1°)



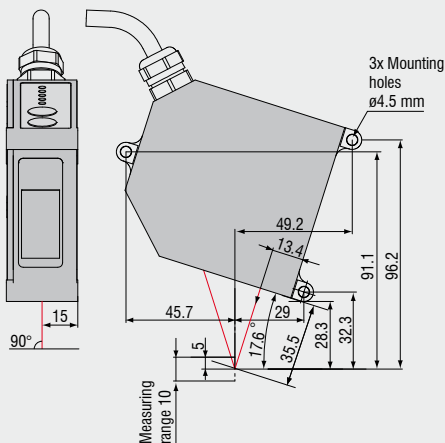
Precision alignment accessory (Mounting device included with delivery)



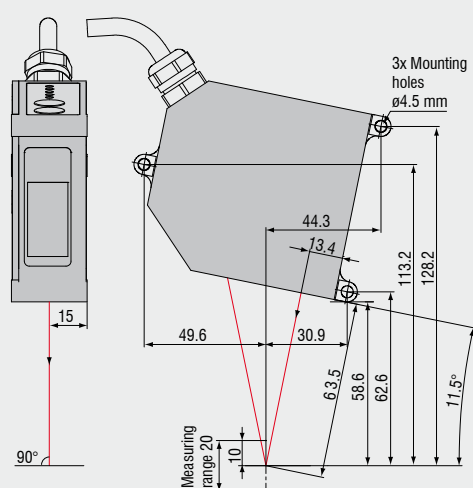
optoNCDT 1700DR (2mm)



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	10μm	40μm
		≤0.1% FSO		≤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)		
Permissible 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