



# More Precision.



**optoNCDT 1700BL**  
BLUE LASER triangulation sensor

# optoNCDT 1700BL



## Blue laser triangulation sensors now available: optoNCDT 1700BL:

Blue violet laser diode (405nm) for improved accuracy on glowing metals and organic materials.

## optoNCDT 1700BL

- Innovative technology using blue violet laser triangulation (wavelength 405nm)
- Optimized high end lenses
- New intelligent laser control and evaluation algorithms
- Displacement and position measurement 20mm - 1000mm
- Suitable for red glowing metals (to 1600°C), silicon (to 1150°C) and organic matters

	<b>Six models with measuring ranges from 20 to 1000mm</b>
	<b>Blue Laser Technology (Blue violet laser diode 405nm)</b>
	<b>Compact design with integrated controller</b>
	<b>Real Time Surface Compensation</b>
	<b>Adjustable measuring rate up to 2.5kHz</b>
	<b>Analogue (U/I) and digital output</b>
	<b>Adjustable filter functions (firmware)</b>
	<b>High flex cables for dragchain or robot use</b>
	<b>Calibration certificate included</b>

Micro-Epsilon presents a worldwide novelty: The first triangulation sensor using blue laser technology.

In numerous applications, blue Laser sensors are clearly superior to the standard sensors with a red laser diode. During measurements on metals, particularly on red glowing metals and organic matters such as wood, skin, foodstuffs, veneers etc., the wavelength of the blue laser offers significant benefits.

In contrast to the red laser, the blue laser light does not penetrate the measuring object due to the reduced wavelength.

The blue laser generates a minimal laser point on the surface and therefore offers stable and precise results on measuring objects which are usually considered to be critical.

The design of triangulation sensors with Blue Laser technology was completely re-designed. The sensors are equipped with new high-end lenses, a new intelligent laser control and evaluation algorithms.



## Technical data

### BLUE LASER Laser triangulation displacement sensors

Model	ILD 1700-20BL	ILD 1700-200BL	ILD 1700-500BL	ILD 1700-750BL	ILD 1710-50BL	ILD 1710-1000BL	
Measuring range	20mm	200mm	500mm	750mm	50mm	1000mm	
Start of measuring range	40mm	100mm	200mm	200mm	550mm	1000mm	
Midrange	50mm	200mm	450mm	575mm	575mm	1500mm	
End of measuring range	60mm	300mm	700mm	950mm	600mm	2000mm	
Linearity	16µm ≤ ±0.08% FSO	200µm ≤ ±0.1% FSO	400µm ≤ ±0.08% FSO	750µm ≤ ±0.1% FSO	50µm ≤ ±0.1% FSO	±1mm ≤ ±0.1% FSO	
Resolution (at 2.5kHz without averaging)	1,5µm	12µm	30µm	50µm	50µm	100µm	
Measuring rate	2.5kHz / 1.25kHz / 625Hz / 312.5Hz (adjustable)						
Light source	semiconductor laser < 1 mW, 405nm (blue violet)						
Permissible ambient light (at 2.5 kHz)	10,000 lx						
Laser safety class	class 2 IEC 60825-1 : 2008-05						
Spot diameter	SMR	320µm	1300µm	1500µm	1500µm	400x500µm	2.5...5mm
	MMR	45µm	1300µm	1500µm	1500µm	400x500µm	2.5...5mm
	EMR	320µm	1300µm	1500µm	1500µm	400x500µm	2.5...5mm
Temperature stability*	0.01% FSO/°C						
Operation temperature	0 ... +50 °C						
Storage temperature	-20 ... +70 °C						
Output	measurements	selectable: 4 ... 20 mA / 0 ... 10 V / RS 422 / USB (option with cable PC1700-3/USB)					
	switching outputs	1 x error or 2 x limit (each programmable)					
Switch input	Laser ON-OFF / Zero						
Operation	via touch screen on sensor or via PC with ILD 1700 tool						
Power supply	24 VDC (11 ... 30 VDC), max. 150 mA						
Sensor cable length (with connector)	standard 0.25m integrated / optional: extension 3m or 10m						
Synchronisation	possible for simultaneous or alternating measurements						
Protection class	IP 65						
Vibration	2 g / 20 ... 500 Hz						
Shock	15 g / 6 ms						
Weight (with 25cm cable)	~ 550g	~ 550g	~ 600g	~ 600g	~ 800g	~ 800g	

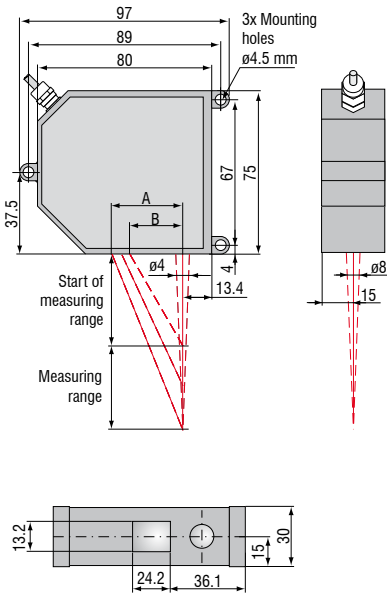
FSO = Full scale output All specifications apply for a diffusely reflecting matt white ceramic target

\*based to digital output ; SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

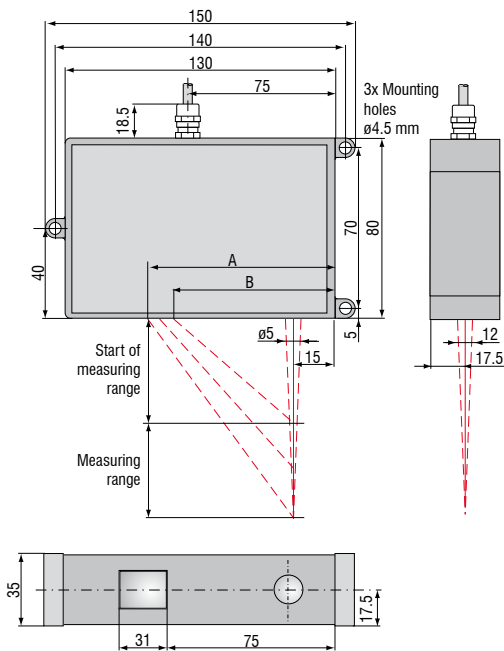
## Dimensions

(Dimensions in mm, not to scale.)

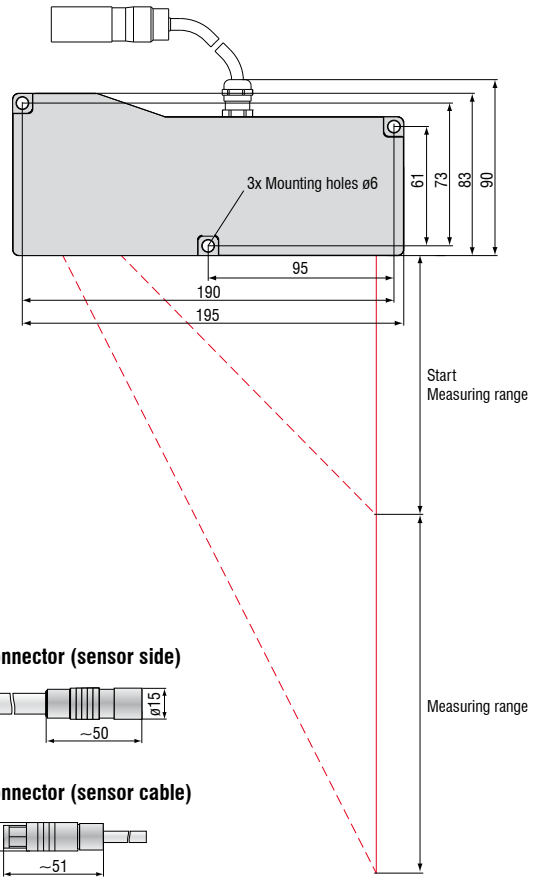
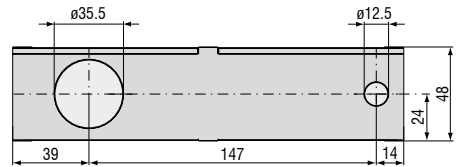
### optoNCDT 1700BL (20/200 mm)



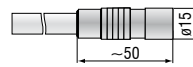
### optoNCDT 1700BL (500/750 mm)



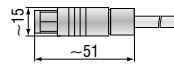
### optoNCDT 1710 (50/1000 mm)



#### Connector (sensor side)



#### Connector (sensor cable)



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MR	SMR	A	B
20	40	30.1	22.0
200	100	33.1	24.1
500	200	101	85
750	200	101	85