



## Laser Triangulation Displacement Sensors

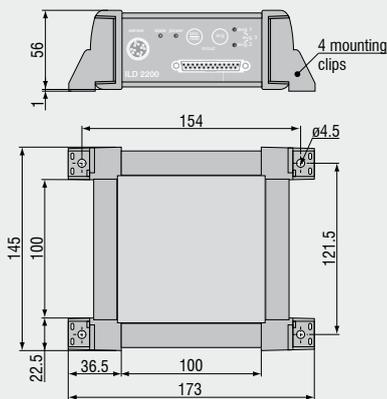




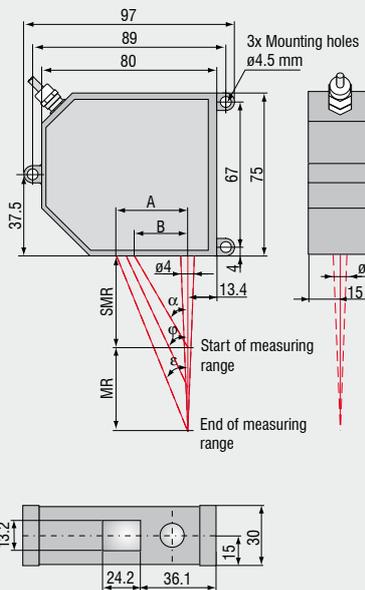
-  **Six models with measuring ranges from 2mm to 200mm**
-  **Sensor head and separate controller**
-  **20kHz measurement rate over the full working range**
-  **Real Time Surface Compensation**
-  **Analogue and digital output**
-  **Adjustable filter functions (firmware)**
-  **Calibration certificate included**
-  **Configuration via software [www.micro-epsilon.com/download](http://www.micro-epsilon.com/download)**

The optoNCDT 2220 provides a genuine 20kHz measurement rate for every measurement task. The series is ideally suited to super-fast, complex applications and offers a high speed measurement with excellent resolution. In addition, the optoNCDT 2220 incorporates all the popular Micro-Epsilon benefits including the RTSC function for changing surfaces or the specific CCD-line for high resolution measurements.

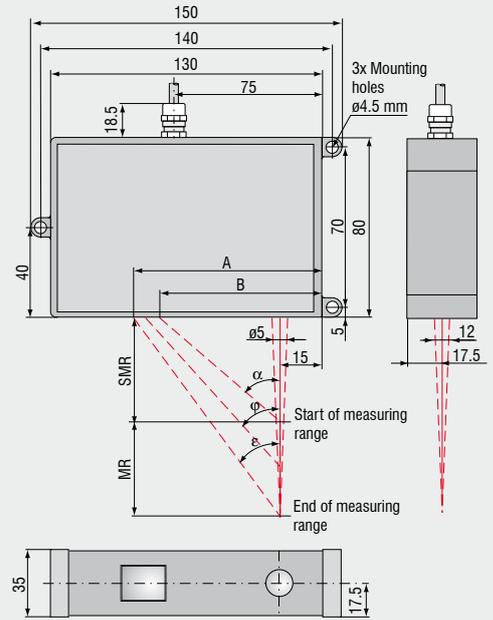
**Controller**



**optoNCDT 2220 (2/10/20/50/100mm)**



**optoNCDT 2220 (200mm)**



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

MR	SMR	$\alpha$	$\phi$	$\epsilon$	A	B
2	24	35.0°	40.0°	44.8°	25.8	16.8
10	30	34.3°	35.2°	35.6°	28.7	20.5
20	40	28.8°	27.5°	26.7°	30.1	22
50	45	26.5°	23.0°	18.3°	31.5	22.5
100	70	19.0°	15.4°	10.9°	32.6	24.1
200	130	25.1°	16.7°	13.1°	91.6	76

Model		ILD 2220-2	ILD 2220-10	ILD 2220-20	ILD 2220-50	ILD 2220-100	ILD 2220-200
Measuring range		2mm	10mm	20mm	50mm	100mm	200mm
Start of measuring range		24mm	30mm	40mm	45mm	70mm	130mm
Midrange		25mm	35mm	50mm	70mm	120mm	230mm
End of measuring range		26mm	40mm	60mm	95mm	170mm	330mm
Linearity		1µm ≤0.05% FSO	3µm	6µm	15µm ≤0.03% FSO	30µm	60µm
Resolution <sup>1)</sup> (at 20 kHz without averaging)		0.03µm	0.15µm	0.3µm	0.8µm	1.5µm	3µm
Measuring rate		20kHz					
Permissible ambient light		30.000lx					
Spot diameter	SMR	80µm	110µm	160µm	215µm	350µm	1300µm
	MMR	35µm	50µm	60µm	80µm	130µm	1300µm
	EMR	80µm	110µm	160µm	215µm	350µm	1300µm
Light source		semiconductor laser <1mW, 670nm (red)					
Laser safety class		class 2 acc. DIN EN 60825-1/A1 12.99 / IEC 825-1/A1 12.99 / FDA					
Protection class		sensor: IP 65 / controller: IP 50					
Temperature stability		0.025 % FSO/°C	0.01 % FSO/°C				
Operation temperature		0 ... +50°C					
Storage temperature		-20 ... +70°C					
Output		analogue: ±5V digital: RS 422 / 691.2kBaud					
Power supply		24VDC (±15%), max. 500mA					
Sensor cable length		standard: 2m - integrated option: 5m/10m					
Controller		functions: auto zero / signal averaging dimensions: 143mm x 145mm x 52mm - without mounting clips					
Electromagnetic compatibility (EMC)		EN 55011/12.1998 and EN 50082-2/ 02.1996					
Vibration		2g / 20 ... 500Hz					
Shock		15g / 6ms / 3 axis					
Weight	sensor	~550g					~600g
	controller	~1000g					

FSO = Full Scale Output

All specifications apply for a diffusely reflecting matt white ceramic target

SMR = Start of measuring range MMR = Midrange EMR = End of measuring range

<sup>1)</sup>resolution digital output 16bit

### 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
- Measuring rate 2.5 / 5 / 10 / 20kHz
- 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