



# More Precision.

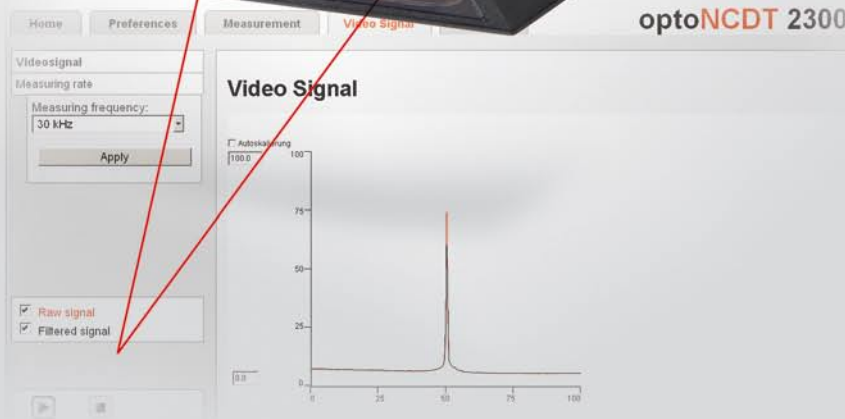
## optoNCDT 2300LL

Extreme dynamic laser sensor with integrated controller for metallic shiny surfaces



# optoNCDT 2300LL

Extreme dynamic laser sensor for metallic shiny surfaces



## Functionality for highest requirements

- ➔ Model LL with small Laser Line averages across shiny metallic or structured surfaces
- ➔ A-RTSC (Advanced-Real-Time-Surface-Compensation), for extreme stability and precision
- ➔ Various interfaces: Ethernet / EtherCAT / RS422; analog output via CSP2008
- ➔ Web browser interface for easy configuration, measurement and evaluation via Ethernet
- ➔ Various options for signal processing: Peak selection, masking of the video signal, data reduction, averaging, filtering, statistics
- ➔ Enlarged data output: Distance, statistics min and max, statistics Peak-Peak, exposure time, insensitivity, error status, measured value counter, time stamp

	<b>Laser Line averages across shiny metallic or structured surfaces</b>
	<b>Four models with measuring ranges from 2mm to 50mm</b>
	<b>Compact design with integrated controller</b>
	<b>Adjustable measuring rate up to 49.02kHz</b>
<b>INTER FACE</b>	<b>Ethernet / EtherCAT / RS422</b>
	<b>Advanced Real-Time-Surface-Compensation</b>
	<b>Calibration certificate included</b>
	<b>Configuration via Web-Interface</b>

## optoNCDT 2300LL - series for metallic shiny surfaces

Interferences in the laser point are due to the surface roughness of objects. These interferences, which are in the sub-micrometre range, are often encountered with polished or shiny metallic surfaces. Due to the laws of physics, this affects the measurement of metallic surfaces.

The new optoNCDT 2300 LaserLine series prevents this effect. Due to special optics, the laser point is enlarged to a short laser line. The measurement value is averaged by using a special software algorithm over the complete length of the line. Interferences that occur on metallic surfaces can therefore be filtered out successfully. For this reason, the exact distance to the metal can be detected.

The optoNCDT 2300LL series is also suitable for difficult, rough, structured surfaces. The surface structure is output as a clear distance signal.

The new A-RTSC (Advanced Real Time Surface Compensation) feature is a further development of the proven RTSC technology and, with its improved dynamic range, enables more precise real time surface compensation during measurements. Threshold values of the compensation area can be easily adjusted using the software provided.

The data are output via Ethernet, EtherCAT or RS422. The complete sensor configuration is effected via a comfortably designed web interface.



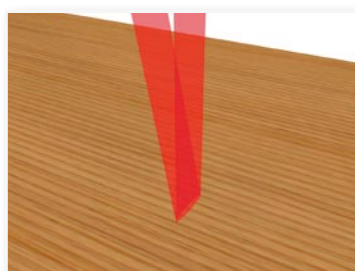
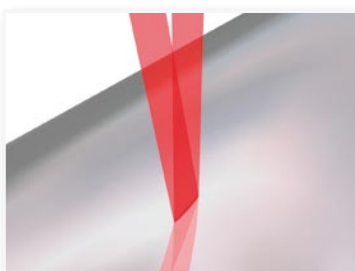
## Technical data

Model		ILD 2300-2LL	ILD 2300-10LL	ILD 2300-20LL	ILD 2300-50LL
<b>Measuring range <sup>1)</sup></b>		2 (2) mm	10 (5) mm	20 (10) mm	50 (25) mm
<b>Start of measuring range</b>	SMR	24 (24) mm	30 (35) mm	40 (50) mm	45 (70) mm
<b>Midrange</b>	MMR	25 (25) mm	35 (37.5) mm	50 (55) mm	70 (82.5) mm
<b>End of measuring range</b>	EMR	26 (26) mm	40 (40) mm	60 (60) mm	95 (95) mm
<b>Linearity</b>		0.6µm ≤ ±0.03% FSO	2µm	4µm ≤ ±0.02% FSO	10µm
<b>Resolution (20kHz)</b>		0.03µm	0.15µm	0.3µm	0.8µm
		0.0015% FSO			
<b>Measuring rate</b>		adjustable via software 49.02 / 30 / 20 / 10 / 5 / 2.5 / 1.5kHz (49.02kHz with reduced measuring range)			
<b>Permissible ambient light</b>		10.000...40.000lx			
<b>Spot diameter</b>	SMR	85 x 240µm	120 x 405µm	185 x 485µm	350 x 320µm
	MMR	24 x 280µm	35 x 585µm	55 x 700µm	70 x 960µm
	EMR	64 x 400µm	125 x 835µm	195 x 1200µm	300 x 1940µm
<b>Light source</b>		laser diode (670nm) class 2			
<b>Protection class</b>		IP 65			
<b>Operation temperature</b>		0 ... +50°C			
<b>Storage temperature</b>		-20 ... +70°C			
<b>Inputs / Outputs</b>		Ethernet / EtherCAT RS422 analog output via CSP2008			
<b>Inputs</b>		laser on/off; synchronization / trigger input			
<b>Power supply</b>		24Vdc (11...30V); PV < 3W			
<b>LED</b>		status / power / Ethernet / EtherCAT			
<b>Sensor cable</b>	standard	0.25m (with cable connector)			
	option	3 / 6 / 9m with Sub D 15 pin connector			
<b>Electromagnetic compatibility (EMC)</b>		EN 61326-1: 2006-10 DIN EN 55011: 2007-11 (group 1, class B) EN 61 000-6-2: 2006-03			
<b>Vibration</b>		2g / 20 ... 500Hz			
<b>Shock</b>		15g / 6ms / 3 axes			

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

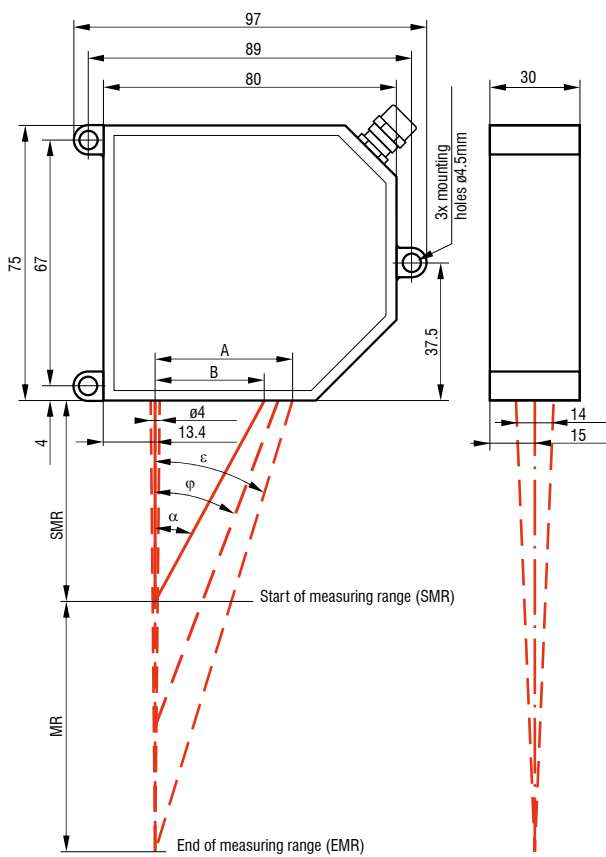
<sup>1)</sup> Numbers in brackets refer to full measurement rate 49.02kHz



## Dimensions

### optoNCDT 2300LL

(Dimensions in mm, not to scale)



MR	2	10	20	50
SMR	24	30	40	45
MMR	25	35	50	70
EMR	26	40	60	95
$\alpha$	35.0	31.7	26.4	25.0
$\varphi$	41.3	35.2	27.7	21.0
$\varepsilon$	47.5	38.2	28.6	19.2
A	28.5	31.6	32.9	33.2
B	16.7	18.4	19.8	20.9

