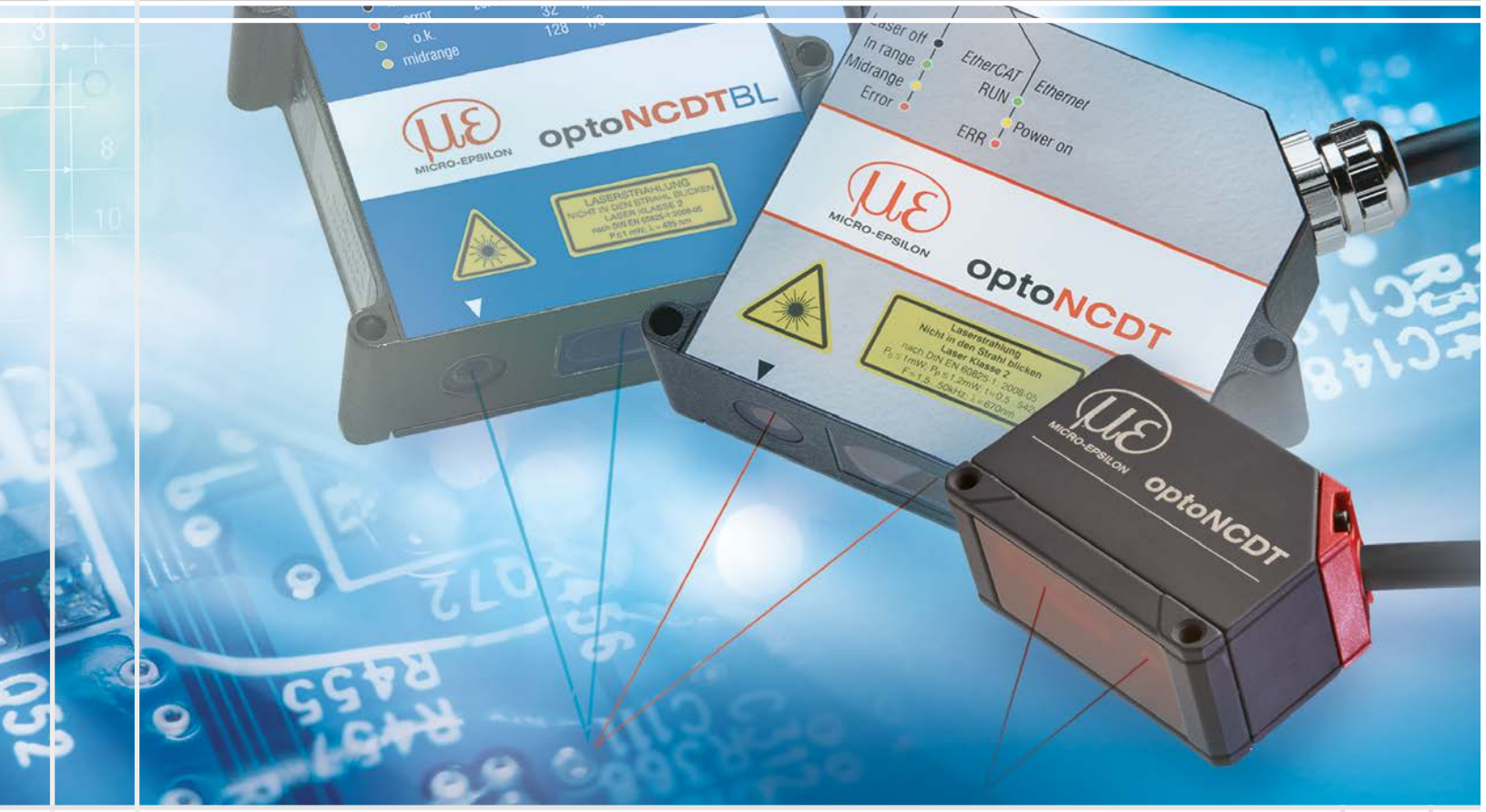
MICRO-EPSILON

More Precision

optoNCDT // Laser displacement sensors (triangulation)



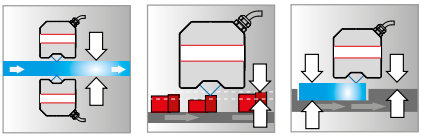
- Blue Laser Technology (Blue violet laser diode 405nm)
- Adjustable measuring rate up to 49.14kHz
- Ethernet / EtherCAT / RS422 Analog ouput via C-Box/2A
- Advanced Real-Time-Surface-Compensation
- Calibration certificate included
- Configuration via web interface

Blue Laser Sensor for direct reflection

The optoNCDT 2300-2DR high precision laser triangulation sensor is designed for highly dynamic measurements on reflective and shiny targets. The sensor can be fixed parallel to the measurement object, which greatly simplifies the installation process. Unlike conventional laser triangulation sensors, the optoNCDT 2300-2DR uses the directly reflected light of the laser. During measurements, the blue laser light is directly reflected by the measurement object onto the receiving optics. Due to the blue laser light, the signal on the receiver element is extremely stable, which means the sensor is able to measure to nanometer resolution. An extremely small laser spot size enables the detection of very small objects.

High speed and precision on reflective, shiny surfaces

The optoNCDT 2300-2DR offers an adjustable measuring rate up to 49kHz and so is suitable for dynamic high speed process monitoring. The new A-RTSC (Advanced Real Time Surface Compensation) feature is a development of the proven RTSC technology and enables more precise real time surface compensation when measuring onto different surface types.



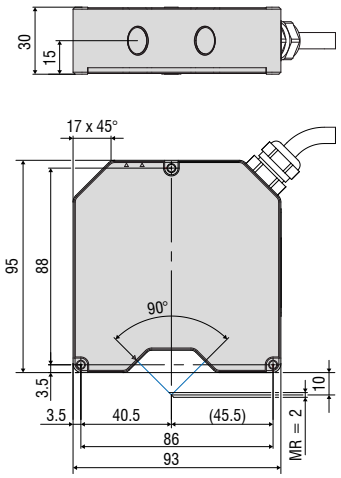
The sensor is used for production control purposes such as thickness measurement of flat glass, assembly monitoring of extremely small parts and for distance measurements on annealed glass.

Compact and easy to integrate

The entire electronics is integrated in a compact sensor housing which is a worldwide unique feature of this sensor class. Data output is via Ethernet, RS422 or EtherCAT. The EtherCAT version will be available from Q2/2017. If the sensor is operated with the C-Box/2A signal processing unit (optional), an analog output is also available. All sensor configurations are carried out using a user-friendly web interface.

Model		ILD 2300-2DR
Measuring range [1]		2mm (1mm)
Start of measuring range		9mm (9mm)
Midrange		10mm (9.5mm)
End of measuring range		11mm (10mm)
Linearity		0.6µm
		≤ ±0.03% FSO
Resolution (20kHz)		30nm
		0.0015% FSO
Measuring rate		switchable (software) 49.14 / 30 / 20 / 10 / 5 / 2.5 / 1.5kHz (49.14kHz with reduced measuring range)
Permissible ambient light		10,000…40,000lx
Spot diameter	SMR	21.6 x 25µm
	MMR	8.5 x 11µm
	EMR	22.4 x 23.7µm
Light source		Semiconductor laser <1 mW, 405nm (blue violet), laser class 2
Protection class		IP65
Operating temperature		0°C ... +50°C
Storage temperature		-20°C ... +70°C
Inputs/Outputs		RS422 / Ethernet / EtherCAT (available from Q2/2017)
Inputs		Laser on/off Synch / Trigger
Power supply		24 VDC (11…30V); PV < 2W
Displays	Status LED	off = Laser OFF red = poor target; out of range yellow = MMR green = ok
	Power LED	off = Power OFF green = Ethernet / RS422
Sensor cable	Standard	0.25m (with connector)
	Option	3/10m with 15-pole sub-D Connector
Electromagnetic compatibility (EMC)		according to EN 55011/12.1998 and EN 50082-2/ 02.1996
Vibration		2g / 20 ... 500Hz
Shock		15g / 6ms / 3 axes

FSO = Full Scale Output
SMR = Start of measuring range; MMR = Midrange; EMR = End of measuring range
[1] Range specifications: value in brackets is valid for a measuring rate of 49.14kHz



Accessories for all optoNCDT Series

Power supply

- PS 2020 (power supply 24 V / 2.5 A, input 100 - 240 VAC, output 24 VDC / 2.5 A, mounting onto symmetrical standard rail 35mm x 7.5mm, DIN 50022)

Controller unit for evaluation and signal conversion

- CSP 2008 (controller for multiple signal processing; analog and digital interfaces)

Controller unit for evaluation and signal conversion

- C-Box/2A (controller for conversion and evaluation of up to two sensor signals)

Interface card

- IF2008 (interface card for multiple signal processing; analog and digital interfaces)

USB converter

- IF2001/USB RS422/USB Converter (converter for digital signals in USB)

USB converter

- IF2004/USB 4 channels RS422/USB Converter (converter, up to 4 digital signals in USB)

Accessories optoNCDT 1320/1420/1402CL1

Supply and output cable, drag-chain suitable

PCF1420-1/I (1m, output 4...20mA)

- PCF1420-1/I(01) (1m, output 4...20mA)
- PCF1420-3/I (3m, output 4...20mA)
- PCF1420-6/I (6m, output 4...20mA)
- PCF1420-10/I (10m, output 4...20 mA)
- PCF1420-15/I (15m, output 4...20mA)
- PCF1420-3/U (3m, with integrated resistor, output 1...5 VDC)*
- PCF1420-6/U (6m, with integrated resistor, output 1...5 VDC)*
- PCF1420-10/U (10m, with integrated resistor, output 1...5 VDC)*
- PCF1420-15/U (15m, with integrated resistor, output 1...5 VDC)*
- PCF1420-3/IF2008 (3m, interface and supply cable)
- PC1420-6/IF2008 (6m, supply and output cable)
- PCF1420-10/IF2008 (10m, interface and supply cable)
- PC 1402-3/CSP (3m, connection cable for CSP 2008, only for optoNCDT 1420)

* on request with output 2...10 VDC

Supply and output cable, suitable for use with robots

(available in 90° version)

- PCR 1402-3/I (3m)
- PCR 1402-6/I (6m)
- PCR 1402-8/I (8m)

Accessories optoNCDT 1610/1630

Supply and output cable

- PC 1605-3 (3m)
- PC 1605-6 (6m)
- PC 1607-5/BNC (5m, BNC connector)

Accessories optoNCDT1700/1700LL/1700BL

Supply and output cable (drag-chain suitable)

- PC 1700-3 (3m)
- PC 1700-10 (10m)
- PC 1700-10/IF2008 (10m, for use with interface card IF2008)
- PC 1700-3/T (3m, for use with trigger box)
- PC 1700-10/T (10m, for use with trigger box)
- PC 1700-3/USB (3m, with USB-RS422-converter, power supply 90 ... 230 VAC)

Supply and output cable (suitable for use with robots)

- PCR 1700-5 (5m)
- PCR 1700-10 (10m)

Supply and output cables for temperatures up to 200°C

- PC1700-3/OE/HT (3m)
- PC1700-6/OE/HT (6m)
- PC1700-15/OE/HT (15m)

Protection housing

- SGHF (with air-purge collar), sizes S and M
- SGH (without air-purge collar), sizes S and M
- SGHF-HT (with water cooling)

Accessories optoNCDT 2300/2300LL/2300BL

Supply and output cable

- PC2300-0,5Y (connection cable to PC or SPS; for operation a PC2300-3/SUB-D will be required)
- PC2300-3/SUB-D (3m; for operation a PC2300-0,5Y will be required)
- PC 2300-3/CSP (3m, connection cable ILD2300-UniController)
- PC 2300-3/IF2008 (interface and supply cable)
- PC 2300-3/OE (3m)
- PC 2300-6/OE (6m)
- PC 2300-9/OE (9m)
- PC 2300-3/CSP (3m, connection cable ILD2300-UniController)
- PC 2300-10/CSP (10m, connection cable ILD2300-UniController)
- PC 2300-15/CSP (15m, connection cable ILD2300-UniController)
- PC 2300-15/OE (15m)

* other cable lengths on request

Protection housing

- SGHF (with air-purge collar), sizes S and M
- SGH (without air-purge collar), sizes S and M
- SGHF-HT (with water cooling)

Supply and output cables for temperatures up to 200°C

- PC2300-3/OE/HT (3m)
- PC2300-6/OE/HT (6m)
- PC2300-9/OE/HT (9m)
- PC2300-15/OE/HT (15m)

High performance sensors made by Micro-Epsilon

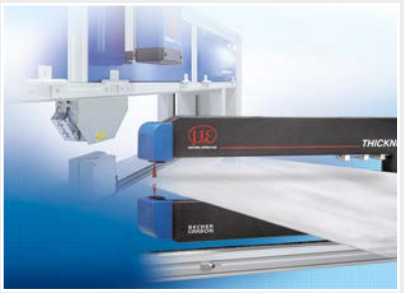
Sensors and systems for displacement and position

Sensors and measurement devices for non-contact temperature measurement

2D/3D profile sensors (laser scanner)

Optical micrometers, fiber optic sensors and fiber optics

Color recognition sensors, LED analyzers and color online spectrometer



Measurement and inspection systems

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