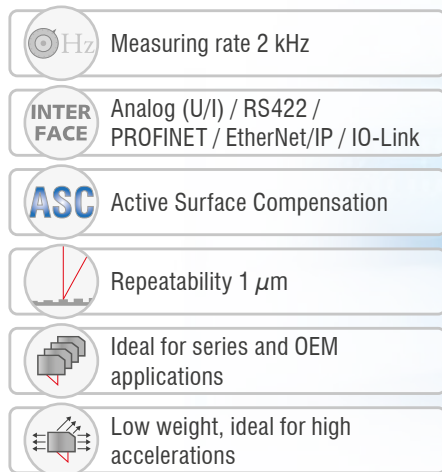**MICRO-EPSILON**

More Precision

optoNCDT 1220-IO-Link // Compact laser displacement sensor with IO-Link

IO-Link inside

Compact laser sensor for OEM and serial applications with IO-Link
optoNCDT 1220

Measuring rate 2 kHz

Analog (U/I) / RS422 / PROFINET / EtherNet/IP / IO-Link

Active Surface Compensation

Repeatability 1 μm

Ideal for series and OEM applications

Low weight, ideal for high accelerations

IO-Link **inside**

NEW: optoNCDT 1220 with IO-Link

The optoNCDT 1220 sensor features an IO-Link interface that simplifies data communication and reduces the commissioning time.

What is IO-Link?

- Fieldbus-independent interface
- Standardized worldwide according to IEC61131-9
- Manufacturer-independent digital, bidirectional point-to-point communication
- Connection to the IO-Link master via 3-wire plug-in cables
- IO-Link can be integrated into all common fieldbus and automation systems

Advantages of IO-Link

- A uniform interface standard
- No different wiring and connection options as with conventional fieldbuses/interfaces
- Lower costs
- Less programming effort
- Faster commissioning
- Continuous communication between sensor and control unit
- Reduced troubleshooting effort due to consistent diagnostic information right down to sensor level
- Reduced downtimes, as sensor parameters can be adjusted by the control system or the operator
- Easier device replacement during operation due to automatic re-parameterization
- Consistent device information

Best in Class:
Compact, precise and faster

The optoNCDT 1220 laser sensors are among the best in their class. They offer a unique combination of speed, size and performance. These laser sensors are used for the precise measurement of displacement, distance and position in all fields of automation technology, such as machine building, 3D printers and robotics.

The optoNCDT 1220 sensors use intelligent surface control. Auto Surface Compensation (ASC) enables stable measurement results, even if the target surface changes color or brightness.

Model	ILD1220-10 -IO-Link	ILD1220-25 -IO-Link	ILD1220-50 -IO-Link	ILD1220-100 -IO-Link	ILD1220-200 -IO-Link	ILD1220-500 -IO-Link
Measuring range	10 mm	25 mm	50 mm	100 mm	200 mm	500 mm
Start of measuring range	20 mm	25 mm	35 mm	50 mm	60 mm	100 mm
Mid of measuring range	25 mm	37.5 mm	60 mm	100 mm	160 mm	350 mm
End of measuring range	30 mm	50 mm	85 mm	150 mm	260 mm	600 mm
Measuring rate [1]	4 adjustable stages: 2 kHz / 1 kHz / 0.5 kHz / 0.25 kHz					
Linearity [2]	$< \pm10\,\mu m$	$< \pm25\,\mu m$	$< \pm50\,\mu m$	$< \pm100\,\mu m$	$< \pm200\,\mu m$	$< \pm750\,\mu m \ldots 1500\,\mu m$
	$< \pm0.10\ \%$ FSO					$< \pm0.15\ \% \ldots 0.30\ \%$ FSO
Repeatability [3]	$1\,\mu m$	$2.5\,\mu m$	$5\,\mu m$	$10\,\mu m$	$20\,\mu m$	$50\,\mu m$
Temperature stability [4]	$\pm0.015\ \%$ FSO / K			$\pm0.01\ \%$ FSO / K		
Light spot diameter [5] — SMR	100 x 130 μm	200 x 260 μm	250 x 340 μm	750 x 1100 μm	750 x 1100 μm	750 x 1100 μm
Light spot diameter [5] — MMR	45 x 50 μm	55 x 60 μm	80 x 95 μm			
Light spot diameter [5] — EMR	160 x 200 μm	260 x 330 μm	300 x 380 μm			
Light spot diameter [5] — smallest Ø	45 x 40 μm with 24 mm	55 x 60 μm with 30 mm	75 x 85 μm with 42 mm	-	-	-
Light source	Semiconductor laser < 1 mW, 670 nm (red)					
Laser class	Class 2 in accordance with IEC 60825-1: 2014					
Permissible ambient light [6]	20,000 lx			7,500 lx		
Supply voltage	24V (11,2 … 30V) DC, P < 2W					
Power consumption	< 2 W (24 V)					
Digital interface	IO-Link 1.1					
Connections	Power/signal: pigtail 0,3 m with M12 screw-in connector, 4-pin; A-coded					
Mounting	Screw connection via two mounting holes					
Temperature range — Storage	-20 … +70 °C (non-condensing)					
Temperature range — Operation	0 … +50 °C (non-condensing)					
Shock (DIN EN 60068-2-6)	15 g / 6 ms in 3 axes, 1000 shocks each					
Vibration (DIN EN 60068-2-27)	20 g / 20 … 500 Hz in 3 axes, 2 directions and 10 cycles each					
Protection class (DIN EN 60529)	IP67					
Material	Aluminum housing					
Weight	approx. 70 g (incl. pigtail)					
Control and indicator elements	Select button: zero, factory settings; 2 x color LEDs for state / output					

[1] Factory setting 1 kHz
[2] FSO = Full Scale Output; the specified data apply to white, diffuse reflecting surfaces (Micro-Epsilon reference ceramic for ILD sensors)
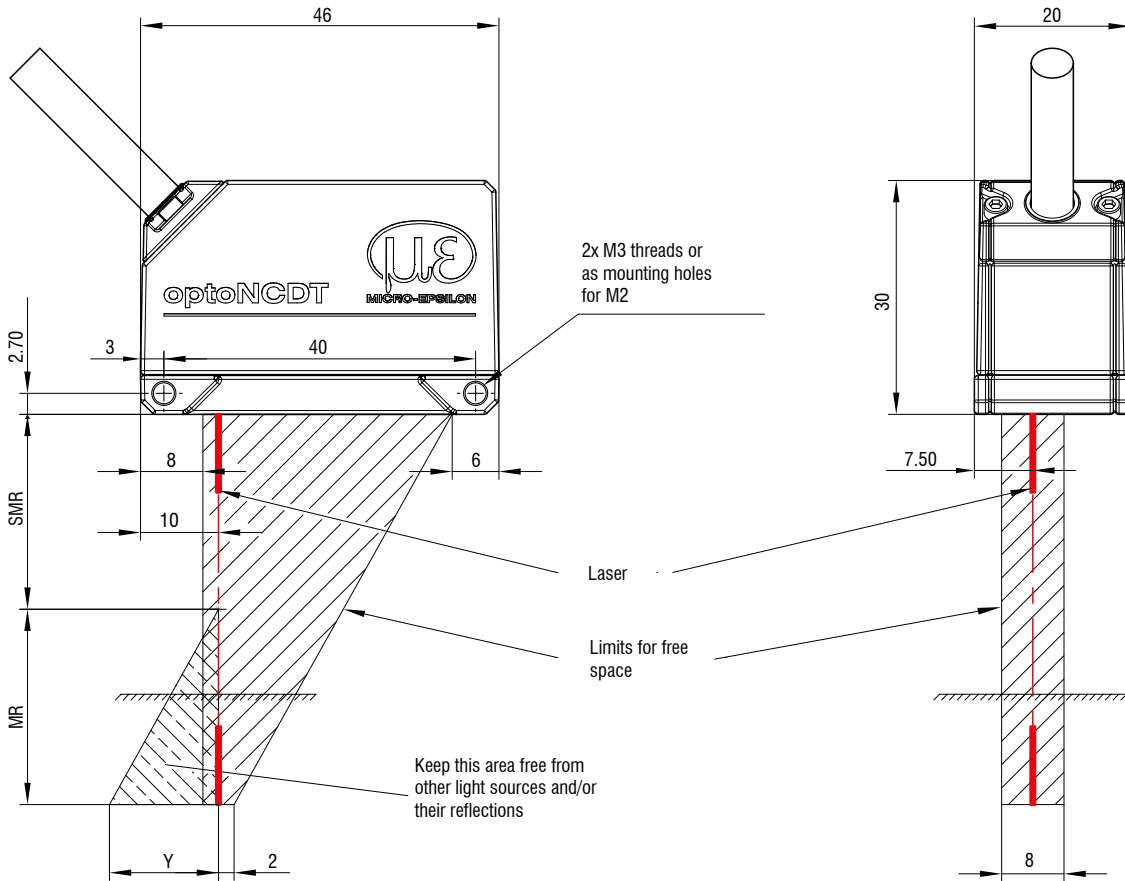[3] Measuring rate 1 kHz, median 9
[4] Related to digital output in the mid of the measuring range; the specified value is only achieved by mounting on a metallic sensor holder. Good heat dissipation from the sensor to the holder must be ensured.
[5] ±10 %; SMR = Start of measuring range; MMR = Mid of measuring range; EMR = End of measuring range
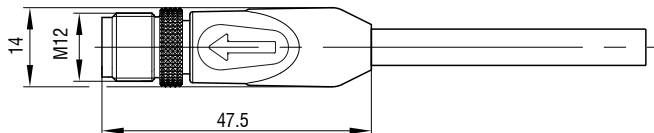[6] Illuminant: light bulb

Dimensions

46

20

2.70

3   40

30

2x M3 threads or
as mounting holes
for M2

8   6

SMR

10

7.50

Laser

Limits for free
space

MR

Keep this area free from
other light sources and/or
their reflections

Y   2

8

optoNCDT 1220

MR	SMR	Y
10	20	10
25	25	21
50	35	28
100	50	46
200	60	70
500	100	190

Connector (sensor side): pigtail 0.3 m

14   M12

47.5

(dimensions in mm, not to scale)

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