

# LASER SENSOR



## Series LAS-TM

### Key-Features:

- very compact housing
- measurement ranges from 10 to 500 mm
- linearity up to  $\pm 6 \mu\text{m}$
- resolution up to  $2 \mu\text{m}$
- protection class: IP67
- working temperature: 0 to 50 °C
- point and line laser versions
- individual parametrization by teach-in procedure
- very precise distance measurement on most materials
- protected against reverse polarity and short circuit
- analog output 4..20 mA or 0... 10 V

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## TECHNICAL DATA

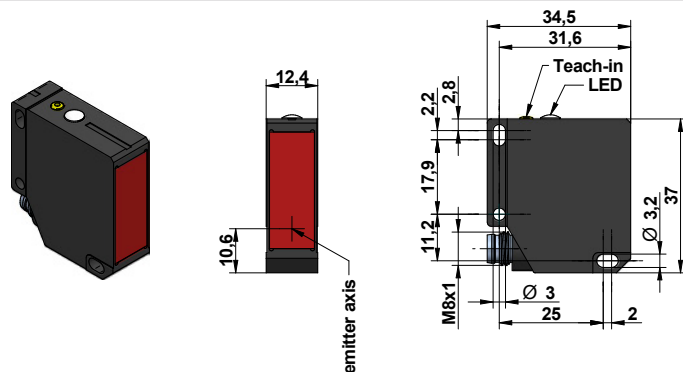
		LAS-TM-10	LAS-TM-104	LAS-TM-300	LAS-TM-500
Measurement range	[mm]	16...26	16...120	50...350	50...550
Linearity <sup>1</sup>	[mm]	±0.006...±0.015	±0.015...±0.35	±0.05...±1.2	±0.08...±3.5
Resolution <sup>1</sup>	[mm]	0.002...0.005	0.002...0.12	0.01...0.4	0.01...1.15
Minimal teach-in range	[mm]	>1	>2	>5	>10
Light source		laser diode red, pulsed			
Laser class		2			
Beam type		point		point or line <sup>2</sup>	
Beam diameter point laser	[mm]	0.5...0.2	0.9...0.5	1	
Beam height line laser	[mm]	-	-	4...9	4...11
Beam width line laser	[mm]	-	-	2	2...1
Wavelength	[nm]	650			
Sensor element		photo diode array			
Measurement frequency	[kHz]	1			0.5
Response time	[ms]	<0.9			<2
Output signal		4...20 mA or 0...10 V			
Power-On indicator		LED green			
Alarm indicator		LED red			
Staining indicator		LED red flashing			
Supply	[VDC]	12...28			
Max. current consumption	[mA]	100		80	
Load resistance	[kΩ]	with output signal 4...20 mA: <0.3 with output signal 0...10 V: >100			
Inverse-polarity protection		yes			
Short-circuit		yes			
Protection class		IP67			
Working temperature	[°C]	0...50			
Connection		M8 connector, 4 pins			
Housing		zinc die-casting		aluminium	

<sup>1</sup> The values for linearity and resolution are given for a mat white reference surface.

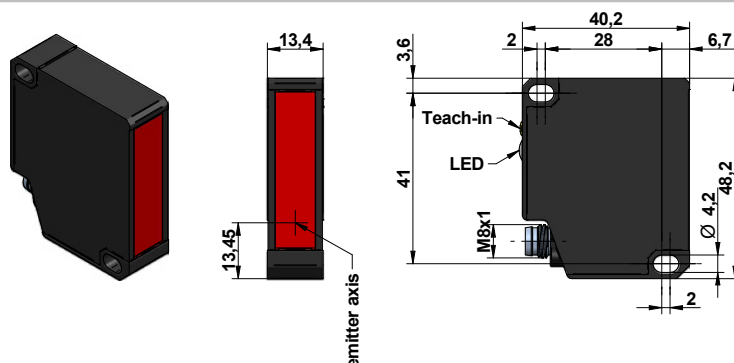
<sup>2</sup> The detector calculates an optical (not a mathematical) averaging of the sampled surface, i.e. a kind of a surface integral.

## TECHNICAL DRAWING

### LAS-TM-10 / LAS-TM-104



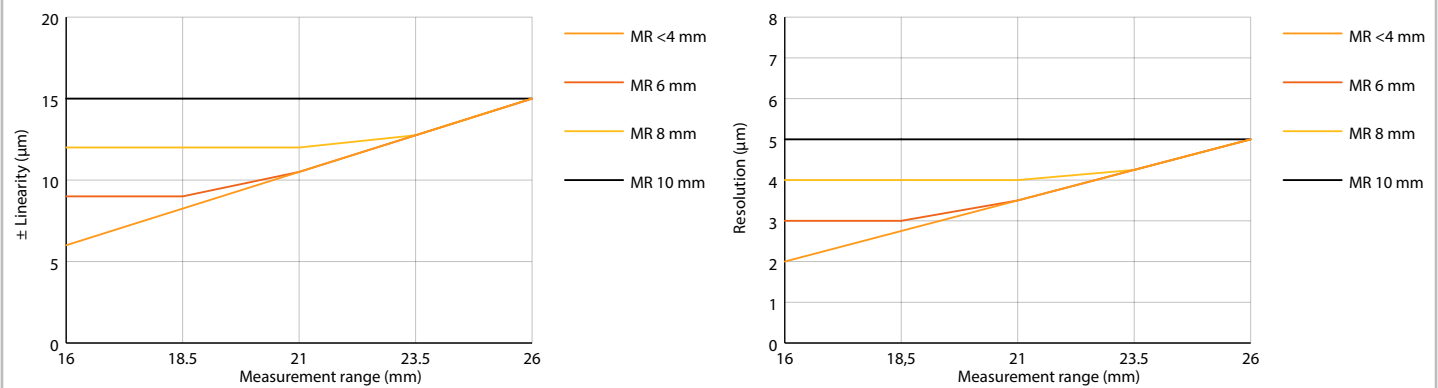
### LAS-TM-300 / LAS-TM-500



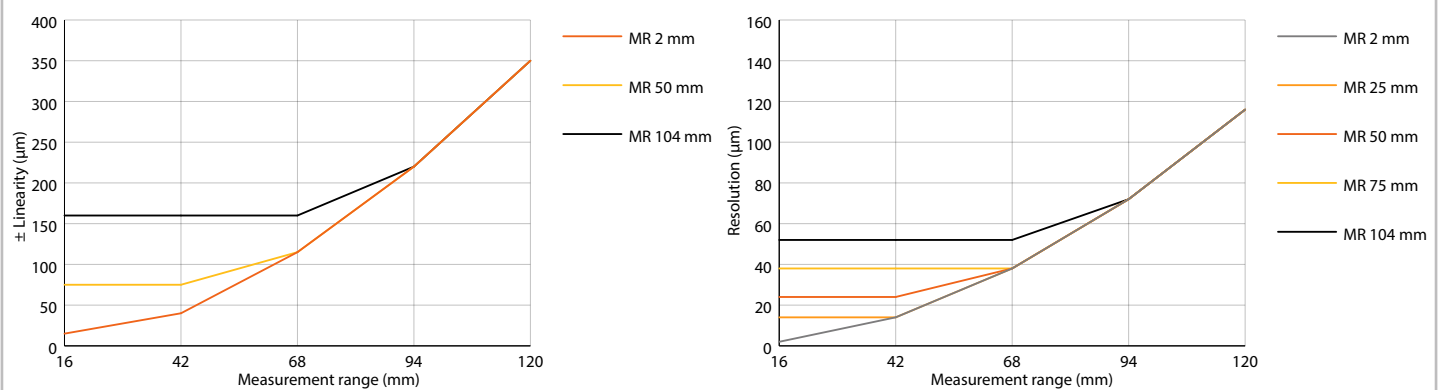
## TEACH-IN - DIAGRAMS LINEARITY AND RESOLUTION

The following diagrams show the change of the linearity and resolution depending on the teached measurement range. The shorter the teached measurement range, the better the linearity and resolution. MR stands for the teached measurement range.

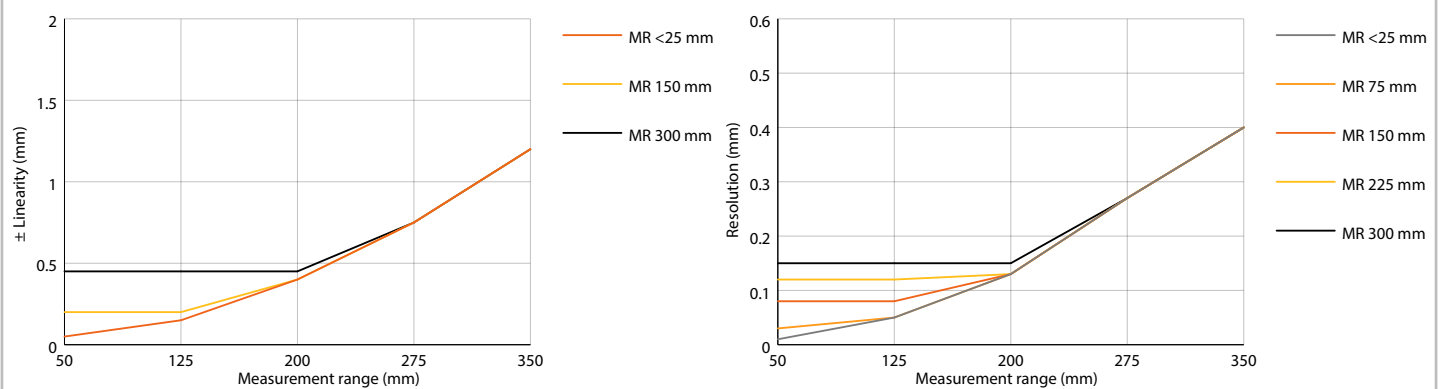
### LAS-TM-10



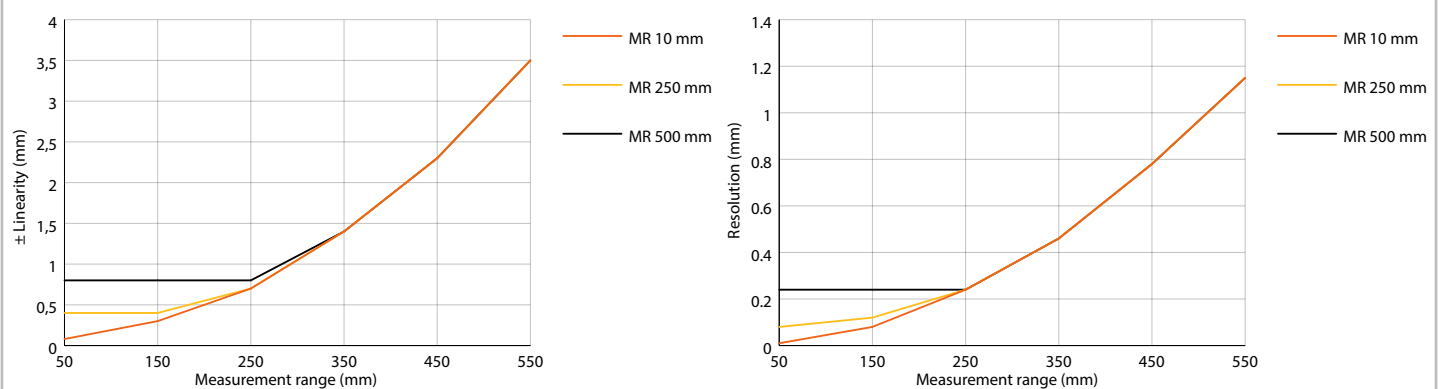
### LAS-TM-104



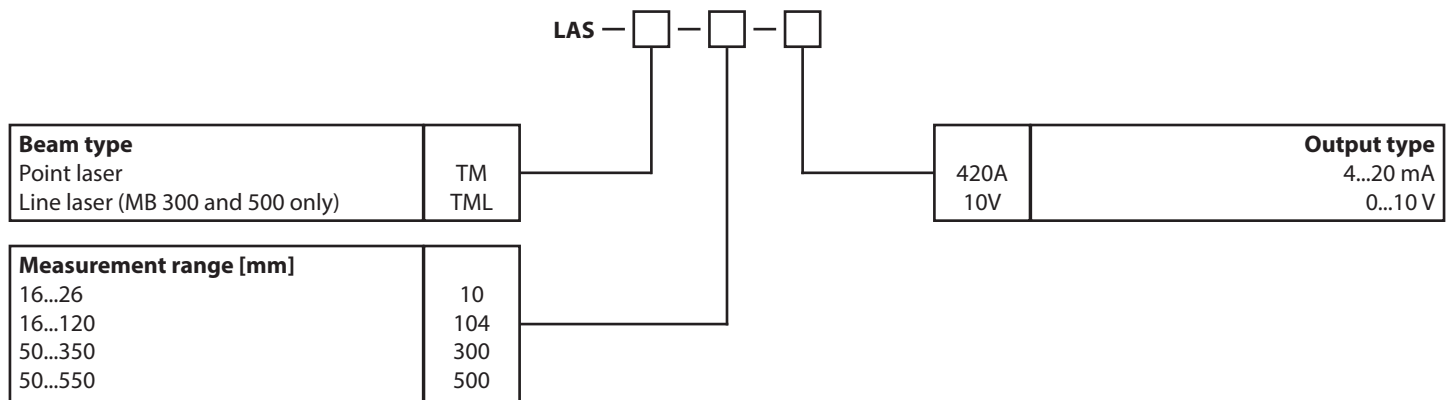
### LAS-TM-300



### LAS-TM-500



## ORDER CODE



## ACCESSORIES

**Cable with mating connector M8, 4 poles, shielded**

K4P2M-S-M8	2 m, connector straight
K4P5M-S-M8	5 m, connector straight
K4P10M-S-M8	10 m, connector straight

**Cable with mating connector M8, 4 poles, shielded**

K4P2M-SW-M8	2 m, connector angular
K4P5M-SW-M8	5 m, connector angular
K4P10M-SW-M8	10 m, connector angular

**Digital displays for sensors with analog output, 2 channel**

WAY-AX-S	touch screen, supply: 18...30 VDC
WAY-AX-S-AC	touch screen, supply: 115...230 VAC

For more information and options please refer to the [WAY-AX data sheet](#).

## GENERAL SAFETY INSTRUCTIONS

- Attention radiation laser.
- Do not stare into beam.
- Do not point the laser beam towards someone's eye.
- It is recommended to stop the beam by a matte object or matte metal shield.
- Laser regulations require the power to the sensor be switched off when turning off the whole system this sensor is part of.

Subject to change without prior notice.

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