



LASE 1000T Black-Line Series

1D Distance meter



The sensors from the latest LASE 1000T Black-Line Series are contactless one-dimensional distance meters especially built for the operation in harsh industrial environments.

The LASE 1000T Black-Line Series is typically used for contactless distance, thickness or width measurements - both at short and long standoff positions.

The devices produce a visible laser point onto an object while the relative position of this laser point is evaluated by a high resolution CCD line camera. From the position of this point along the CCD line, the distance is computed to the object. Due to this procedure an accuracy of up to 0,001 mm depending on its measuring range can be achieved and the range on natural surfaces amounts to max. 750 mm. The sensors incorporate an automatic regulation of the light intensity and thereby provide unsurpassed measuring characteristics.

The LASE 1000T Sensor Series are compact devices because all optical elements are integrated with the electronic components in a highly durable aluminium housing. The sensors do not contain mobile parts and are appropriate for measurement tasks in heavy industrial environments or where precision demands have to be better than 1 mm, e.g. at thickness measurements or quality control.

The distance sensors of the LASE 1000T Series are optical measuring devices which work according to the triangulation principle. This technique ensures the highest accuracies within μm of range:

- Measurement length, width, height, level and position of objects
- Positioning of machine parts
- Quality control of paper, steel or aluminum coils
- Slab width and thickness measurement
- Measurement of liquid levels and solid materials
- Measurement and regulation of slack

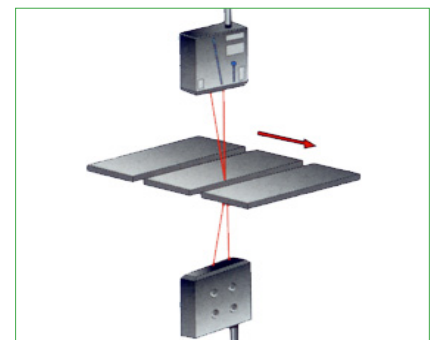
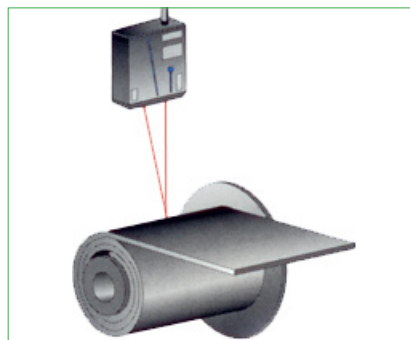
Features and Benefits:

- Contactless distance measurement
- Measurement range from 50 mm up to 750 mm
- Highest accuracy in the μm -area
- High measuring rate [up to 2 kHz]
- Interfaces: analog, digital [RS 232 or RS 422] and Ethernet
- Suitable for measurements on nearly all surfaces
- Applicable for target temperatures of up to 450 °C
- Simple installation at each position
- Rugged construction type to IP 65
- Optional cooling/protection housing for hot environments

LASE 1000T Black-Line Series - Extended versions:

- HT-Version for target temperatures of up to 1000 °C
- VHT-Version for target temperatures of up to 1300 °C
- VVHT-Version for target temperatures of up to 2200 °C
- All HT-Version are available with laser class 3R and 3B

Typical applications



Technical data

Model	LASE 1000T 205	LASE 1000T 230	LASE 1000T 280	LASE 1000T 330	LASE 1000T 445	LASE 1000T 455	LASE 1000T 510	LASE 1000T 550	LASE 1000T 650	LASE 1000T 775
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DISTANCE MEASUREMENT

Measuring range										
◦ Full Scale	50 mm	100 mm	200 mm	300 mm	500 mm	100 mm	200 mm	300 mm	500 mm	750 mm
◦ Normal Scale	180 - 230 mm	180 - 280 mm	180 - 380 mm	180 - 480 mm	200 - 700 mm	400 - 500 mm	400 - 600 mm	400 - 700 mm	400 - 900 mm	400 - 1150 mm
Center distance	205 mm	230 mm	280 mm	330 mm	450 mm		500 mm	550 mm	650 mm	775 mm
Spot size	Ø 0,5 mm	Ø 0,6 mm	Ø 0,7 mm	Ø 0,8 mm	Ø 0,5 mm	Ø 0,6 mm	Ø 0,7 mm	Ø 0,8 mm	Ø 1 mm	
Laser safety class ¹	IEC 2									

SCAN AND PROFILE MEASUREMENT

Resolution [at short range] ²	0,01 mm									
Resolution [at long range] ²	0,01 mm		0,02 mm	0,03 mm	0,07 mm	< 0,02 mm	0,02 mm	0,04 mm	0,10 mm	
Linearity ²	< ± 0,01 mm	± 0,02 mm	± 0,04 mm	± 0,09 mm	± 0,20 mm	± 0,04 mm	± 0,06 mm	± 0,15 mm		± 0,30 mm
Temperature deviation [0° ... 40° C]	± 0,3 mm FS/C°									
Measuring frequency ²	2 / 1 kHz									
Wave length	650 nm									

INTERFACES

Analog ³	4-20 mA									
	1-9 V									
Digital ⁴	RS 232 or RS 422									

ELECTRICAL & MECHANICAL

Power supply	22 ... 36 V DC									
Power consumption	max. 4,5 W									
Protection class	IP 65									
Dimensions	95 x 120 x 31,5 mm									
Weight	approx. 390 g									

ENVIRONMENT DATA

Temperature range	operation: 0° ... 45° C ³ ; storage: -20° C ... +70° C									
Humidity	max. 90% relative humidity									

Declarations:

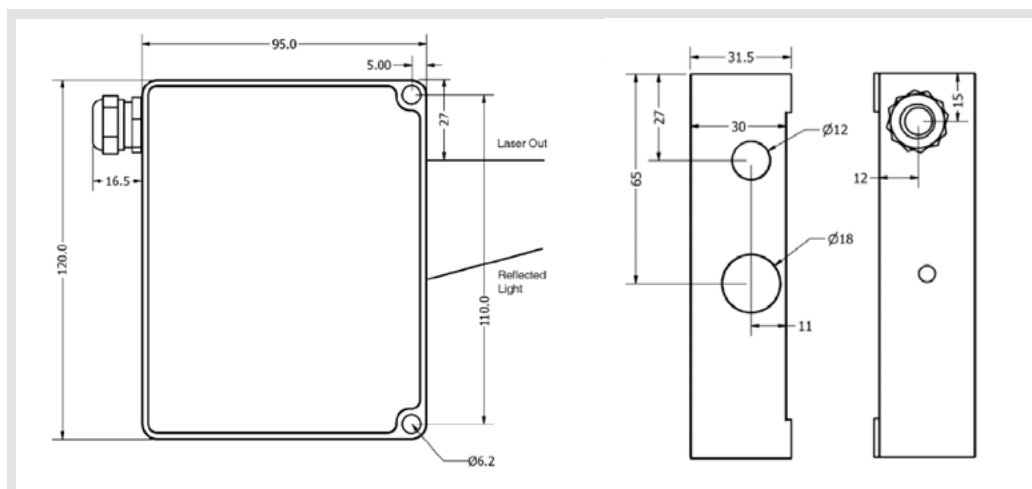
- ¹Laser class IEC 3R at HT and VHT sensor series with a frequency of 1 or 2 kHz.
- ²Resolution, Linearity and Frequency valid for static measurements on white paper.
- ³Analog output: 14 Bit DAC's are used for the conversion of the digital distance result (nominal resolution 0,01 mm).
- ⁴Analog and digital output are updated at the measuring frequency of 2 kHz (exception at activating Simple Average Filter).

Scope of delivery:

- Sensor
- Operating instruction
- Configuration Software

Options:

- Sensors are fitted with a 12 pin male M12 connector. Cable with female connector for the sensor part can be ordered in the lengths between 2 m and 10 m.
- **Type /2:** 2 meter cable length
 - **Type /10:** 10 meter cable length
 - **Type /10HT*:** 10 meter cable length (HT indicates high temperature specification cable - Environment temperature max. 260°C)



Contact

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