

LASE 1000T GREEN-LINE SERIES

The distance sensors of the LASE 1000T Green-Line Series are optical measuring instruments which work according to the triangulation principle. This technique ensures 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

THE SENSOR

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

The sensors out of the LASE 1000T Green-Line Series are typically used for contactless distance, thickness or width measurements. 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 $\pm 0,01$ mm depending on its measuring range can be achieved and the range on natural surfaces amounts to max. 4000 mm. The sensors incorporate an automatic regulation of the light intensity and thereby provide unsurpassed measuring characteristics.

Sensors out of the LASE 1000T Series are very compact units 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 and where precision demands have to be better than 1 mm, e.g. at thickness measurements or quality controls.



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-Versions are available with laser class 3R and 3B

THE FEATURES

- ✓ Contactless distance measurement
- ✓ Measuring area up to 2000 mm
- ✓ Measurement range up to 4000 mm
- ✓ High measuring rate (up to 10 kHz)
- ✓ Interfaces: analog, digital (RS 232 or RS 422)
- ✓ Median filter
- ✓ Rugged construction type to IP 65

THE BENEFITS

- ✓ Highest accuracy in the μm -area
- ✓ High resolution
- ✓ Synchronized thickness measurement with 2 sensors
- ✓ Suitable for measurements on nearly all surfaces
- ✓ Simple installation at each position
- ✓ Closed-loop control of light intensity

TECHNICAL DATA: LASE 1000T GREEN-LINE SERIES

LASE 1000T	500	505	700	925	950	1100	1150	1400	1950	3000
DISTANCE MEASUREMENT										
Measuring range	400 - 600 mm	450 - 550 mm	600 - 800 mm	600 - 1250 mm	850 - 1050 mm	1000 - 1200 mm	700 - 1600 mm	700 - 2100 mm	1500 - 2400 mm	2000 - 4000 mm
Center distance	500 mm		700 mm	925 mm	950 mm	1100 mm	1150 mm	1400 mm	1950 mm	3000 mm
Spot size	Ø 2 mm	Ø 1 mm	Ø 2 mm	Ø 4 mm	Ø 3 mm		Ø 4 mm	Ø 5 mm		
Laser safety class ¹	IEC 2									
SCAN AND PROFILE MEASUREMENT										
Resolution	0,03 mm	0,01 mm	0,03 mm	0,1 mm	0,03 mm		0,1 mm	0,3 mm	0,2 mm	0,5 mm
Linearity ²	± 0,06 mm	± 0,03 mm	± 0,06 mm	± 0,2 mm	± 0,06 mm		± 0,3 mm	± 0,7 mm	± 0,5 mm	± 1 mm
Reproducibility	± 0,03 mm	± 0,01 mm	± 0,03 mm	± 0,1 mm	± 0,03 mm		± 0,1 mm	± 0,3 mm	± 0,2 mm	± 0,5 mm
Measuring frequency ²	1 kHz									
INTERFACES										
Analog ³	4-20 mA									
	1-9 V									
Digital ⁴	RS 232 or RS 422									
ELECTRICAL & MECHANICAL										
Power supply	24 V DC ± 10 %									
Power consumption	max. 4,5 W									
Protection class	IP 65									
Dimensions	255 x 205 x 70 mm									
Weight	approx. 4500 g									
ENVIRONMENT DATA										
Temperature range	operation: 0° ... 45° C 3 storage: -20° C ... +70° C									
Humidity	max. 90% relative humidity									

¹ Laser class IEC 3R at HT and VHT sensor series with a frequency of 1 or 2 kHz.

² Resolution, Linearity and Frequency valid for static measurements on white paper.

³ Analog output: 14 Bit DAC's are used for the conversion of the digital distance result (nominal resolution 0,01 mm).

Scope of delivery; sensor, operating instructions, configuration software

