



LASE 2000D-22x Series

2D Laser scanner



The laser scanners from the LASE 2000D-22x-Series are a contactless two-dimensional distance measuring system built for the industrial environment and outdoor purposes.

2D profiles of the surrounding are scanned by the pulsed IR laser beam which is transmitted via a rotating mirror head. The 2D contour data of the scanned surroundings, which are figured in constant raw data, combines distance and angle values as delivered output by the scanner interface. The sensors transmit extremely short multiple light pulses, measures the running time of these pulses to the object and back and computes the distance. The measuring data will be sent over Ethernet in real time. Innovative beam forming optics allow accurate object profiling and high measurement accuracy. The scanners are able to scan moving objects by fast scan rates of up to 40 Hz in high dynamic applications as well as scanning static objects with an accuracy up to 3 mm (average of several scans).

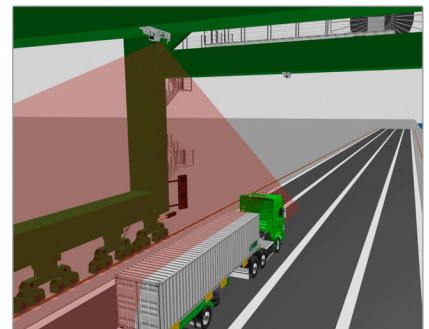
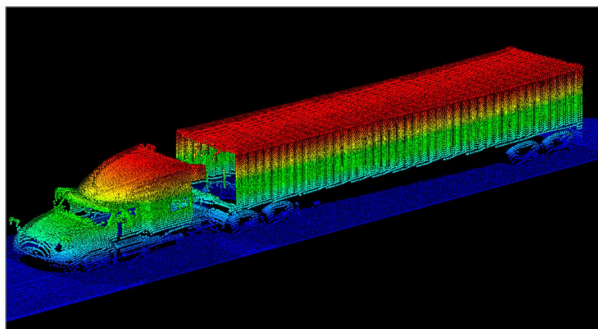
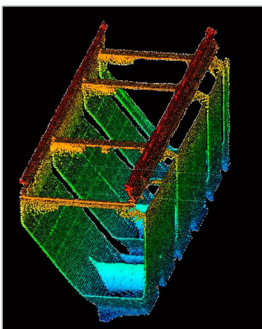
The LASE 2000D-Series is suitable for a huge variety of industries and applications such as:

- Measurement of dimensions and levels of objects and environments
- Positioning of objects
- Container recognition/measurement ports
- Support of crane open-loop controls by goods detection
- Profile measurement
- Object protection
- Bulk material in heaps, bunkers or trucks

Features and Benefits:

- Contactless distance measurement
- Range: up to 95 m on dark surfaces (10% remission)
up to 300 m on white surfaces
- Selectable measurement modes:
 - > Scan rate: 40 Hz
 - > Spot raster: 0,023° in „Fine“-Mode (interlaced)
- Accuracy: ≤ 3 mm
- High accuracy, high resolution and high measuring rate
- Innovative beam forming optics minimize measurement spot size
- Red laser marker to align laser scanner
- Interfaces: Ethernet: UDP 100 Mbit/s
Serial: RS-232 115 kBaud
- Measuring beam: Laser class 1 / 1 M
- Integrated heating

Typical applications



Technical data

Model	LASE 2000D-224	LASE 2000D-225	LASE 2000D-226	LASE 2000D-227
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Distance measurement

Distance Range	0,5 ... > 150 m	0,5 ... > 180 m	2,5 ... > 250 m	2,9 ... > 300 m	White, 100% reflectivity
	0,5 ... > 47 m	0,5 ... > 57 m	2,5 ... > 80 m	2,9 ... > 95 m	10% target reflectivity
Accuracy	4 mm		4,5 mm	5 mm	Repeatability 1 σ @ strong signal
	20 mm				Repeatability 1 σ @ weak signal
	≤ 3 mm		≤ 4 mm		Systematic error
Laser spot size	12 x 18 mm				@ Sensor window
	24 x 24 mm	24 x 40 mm	24 x 64 mm	24 x 80 mm	@ 40 m range
Divergence	0,5 mrad				Vertical
	0,54 mrad	0,83 mrad	1,32 mrad	2,01 mrad	Horizontal
Resolution	1 mm				
Laser pulse rate	40 kHz				
Laser class (Scanner)	1		1 M		EN 60825-1; 94, 96, 01
Laser class (Marker)	2				

Scan & profile measurement

Scan angle	1 to 90°		Adjustable
Step Width	0,09		Normal-Mode
	0,023		Fine-Mode
	0,18		Fast-Mode
Measurement points (per Scan)	1000		Normal-Mode (at 90°)
	4000		Fine-Mode (at 90°, 4 scans/5 Hz)
	500		Fast-Mode (at 90°, 40 Hz)
Scan Rate	20/40 Hz		

Interfaces

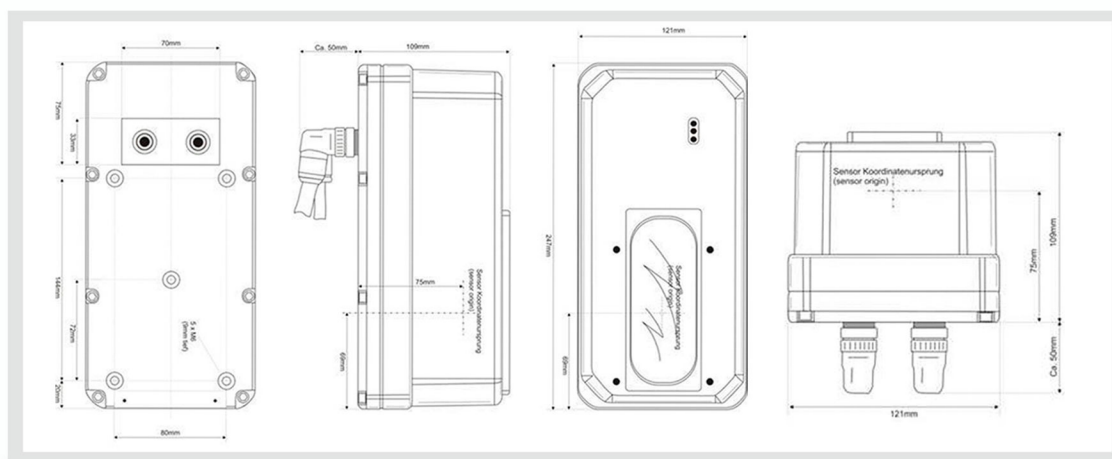
RS232	115 kBaud	Configuration and FW updates
Ethernet	100 Mbits/s	Real time data output

Electrical & mechanical

Power transfer	24VDC or POE 15 W max.	Power over Ethernet with injector
Supply voltage direct	DC Input 24 +/- 5 V	
Power consumption	7 W	Without heater
Startup time	30 s	
Protection class	IP 67	
Enclosure	Aluminium die-cast	Sea air resistant
Dimension	247 mm x 121 mm x 109 mm	
Weight	2600 g	

Environment data

Operating temperature range	-30°C ... +50°C	Temperatures > 50°C on request
Storage temperature range	-25°C ... +85°C	



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