

Product data sheet



LASE 2000D-23x Series

2D Laser scanner



Laser scanners of the LASE 2000D-23x series are contactless two dimensional distance and profile measuring sensors especially built for industrial environments and outdoor measurement applications.

2D profiles of objects or machines are scanned by the LASE 2000D-23x sensor with a pulsed IR laser beam which is transmitted from the sensor via a rotating mirror head. The sensor transmits extremely short multiple light pulses, the measurement of the time of these pulses sent to an object and back to the scanner results in the distance of the object to the scanner. Furthermore, each scan of the sensor also includes raw data and combined distance and angle values. All provided and measured data result in a 2D profile. Measured data will be sent over Ethernet in real time. Innovative beam forming optics allow accurate object profiling and highest measurement accuracy. The scanners are able to scan moving objects by fast scan rates of up to 60 Hz in high dynamic applications as well as scanning static objects with an accuracy of up to 5 mm [average of several scans].

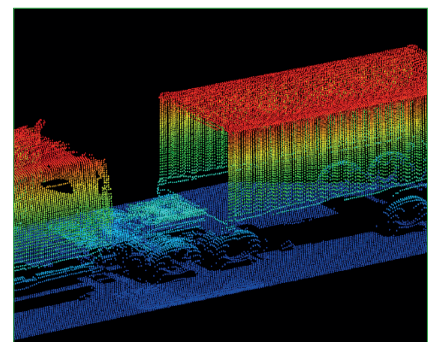
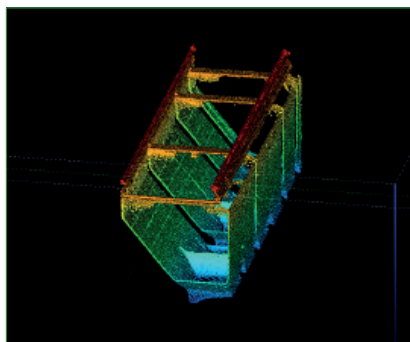
The LASE 2000D-23x Series is suitable for a huge variety of industries and applications such as:

- Measurement of dimensions, profiles and objects
- Collision prevention
- Container measurement in ports
- Object protection
- Bulk material in heaps, bunkers, trucks etc.
- Volume measurement

Features and Benefits:

- Contactless distance measurement
- Range: 45 m up to 120 m on dark surfaces [10% remission]
150 m up to 400 m on white surfaces [depending on sensor]
- Selectable measurement modes:
 - Scanrate: 60 Hz or 30 Hz
 - Spot raster: 0,0225° in „Interlaced“-Mode
 - Spot raster: 0,09° in „Normal“-Mode
- Accuracy: ≤ 5 mm
- High accuracy, high resolution and high measuring rate
- Innovative beam forming optics to minimise measurement spot size
- Red laser marker to align laser scanner
- Interfaces: Ethernet: UDP 100 Mbit/s
- Measuring beam: Laser class 1
- Integrated heating

Features



Technical Data

Model	LASE 2000D-234	LASE 2000D-236	LASE 2000D-237	LASE 2000D-238
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DISTANCE MEASUREMENT

Distance range	0,8 ... 150 m	1,8 ... 250 m	2,5 ... 300 m	2,7 ... 400 m	White, 100% target reflectivity
	0,8 ... 45 m	1,8 ... 80 m	2,5 ... 95 m	2,7 ... 120 m	Black, 10% target reflectivity
Accuracy	5 mm			6 mm	Repeatability 1 sigma [strong signal]
	20 mm				Repeatability 1 sigma [weak signal]
	≤ 5 mm				Systematic error
Laser spot size	12 x 18 mm			12 x 19 mm	At sensor window
	15x24 mm	15x55 mm	15x68 mm	15x102 mm	At 40 m range
Divergence	0,5 mrad			0,6 mrad	Vertical / perpendicular
	0,7 mrad	1,33 mrad	1,67 mrad	2,5 mrad	Horizontal
Resolution	1 mm				
Laser pulse rate	Up to 60 kHz				
Laser class	1				EN 60825-1; 94,96,01

INTERFACES

Ethernet	TCP/UDP 100 Mbits/s	Real time data output
RS 232	115 kBaud / 8 n 1	Configuration and FW updates

ELECTRICAL & MECHANICAL

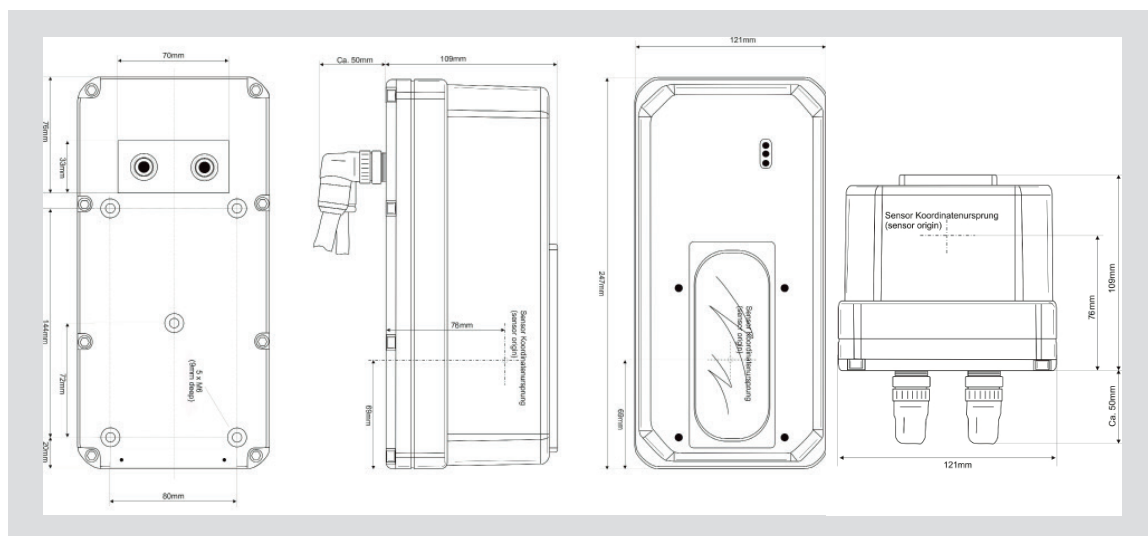
Supply voltage direct	DC Input 24 V ±5 V	
Power consumption	12 W [Heater off] / 36 W [Heater on]	
Startup time	30 s	
Protection class	IP 67	
Enclosure	Aluminium die-cast	Sea air resistant
Dimension	247 mm x 121 mm x 109 mm	
Weight	2,8 kg	

ENVIRONMENT DATA

Operating temperature	-30°C ... +50°C	Temperatures > 50°C on request
Storage temperature	-30°C ... +70°C	

SCAN VALUES & PROFILE MEASUREMENT

Scan angle	1 to 90°	Adjustable
Step width	0,18° [60 Hz]	Fast mode
	0,09° [30 Hz]	Normal mode
	0,045° [15 Hz]	Fine mode
	0,0225° [7,5 Hz]	Interlaced-Modus
Measurement points [per scan]	500	Fast mode [at 90°, 40 Hz]
	1000	Normal mode [at 90°]
	2000	Fine mode
	1000 / 4000	Interlaced-Modus
Scan rate [Hz]	7,5 / 15 / 30 / 60 Hz	



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