

# LASE 2000D-24x SERIES

The LASE 2000D-24x 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

## THE SENSOR

Laser scanners of the LASE 2000D-24x Series are contactless two-dimensional distance and profile measuring sensors especially built for industrial environments and outdoor measurement applications.

The LASE 2000D-24x sensors scan 2D profiles of objects or machines with a pulsed IR laser beam which is transmitted from the sensor via a rotating mirror head. The sensors transmit extremely short multiple light pulses. The time measurement of these pulses sends to an object and back to the scanner results in the object's distance to the scanner. Furthermore, each sensor scan also includes raw data and combined distance and angle values. All provided and measured data result in a 2D profile. The measured data will be sent over Ethernet in real-time. Innovative beam forming optics allow accurate object profiling and the highest measurement accuracy. The scanners can scan moving objects at fast scan rates of up to 100 Hz in high dynamic applications and scan static objects with an accuracy of up to 4 mm (average of several scans).



## SELECTABLE MEASUREMENT MODES:

- » Scanrate: 100 Hz or 60 Hz
- » Spot raster: 0,018° in „interlaced“-mode
- » Spot raster: 0,09° in „normal“-mode

## THE FEATURES

- ✓ 120° Scan angle
- ✓ Contactless distance measurement
- ✓ Range: Up to 160 m on dark surfaces (10% remission)
- ✓ Up to 500 m on white surfaces (depending on sensor)
- ✓ Red laser marker to align laser scanner
- ✓ Interfaces: Ethernet: UDP 100 Mbit/s

## THE BENEFITS

- ✓ High accuracy, high resolution and high measuring rate
- ✓ Accuracy:  $\leq 4$  mm
- ✓ Innovative beam forming optics to minimises measurement spot size
- ✓ Integrated heating
- ✓ Measuring beam: Laser class 1

## TECHNICAL DATA: LASE 2000D-24x SERIES

LASE 2000D	-245	INFO
<b>DISTANCE MEASUREMENT</b>		
Distance Range	1.8 ... 500 m	White, 100% reflectivity
	1.8 ... 160 m	10% target reflectivity
Accuracy	4 mm	Repeatability 1 $\sigma$ at strong signal
	18 mm	Repeatability 1 $\sigma$ at weak signal
	$\leq 4$ mm	Systematic error
Laser spot size	12 x 18 mm	at Sensor window      Focused at 45 m
Divergence	0.076 / 1.33 mrad	Vertical
	0.029 / 0.50 mrad	Horizontal
Resolution	1 mm	
Laser pulse rate	Up to 100 kHz	
Laser class	1	EN/IEC 60825-1:2014
<b>INTERFACES</b>		
Ethernet	TCP/UDP 100 Mbits/s	Real time data output
RS232	115 kBaud	Configuration and FW updates
<b>ELECTRICAL &amp; MECHANICAL</b>		
Voltage	24 VDC or PoE 15 W max	PoE with Injector
Voltage - direct	DC Input 24 V $\pm 5$ V	
Power consumption	12 W	without heater
	36 W	with heater
Startup time	30 s	
Protection class	IP 67	
Enclosure	Aluminium	seawater resistant
Dimension	247 mm x 121 mm x 109 mm	
Weight	2.8 kg	
<b>ENVIRONMENT DATA</b>		
Operating temperature range	-30°C ... +50°C	Temperatures > 50°C on request
Storage temperature range	-30°C ... +70°C	
<b>SCAN &amp; PROFILE MEASUREMENT</b>		
Scan angle	1 to 120°	Adjustable
Step Width	0.18°	Fast-Mode
	0.144°	Fast+-Mode
	0.09°	Normal-Mode
	0.036°	Fine-Mode
	0.018°	Interlaced-Mode
Measuring points (per scan)	666	Fast-Mode (at 120°)
	1333	Normal-Mode (at 120°)
	2333	Fine-Mode (at 120°)
	1666	Interlaced-Mode (at 120°)
Scan Rate	60 / 100 Hz	

Scope of delivery: sensor, operating instruction, configuration software

