

# LASE 3000D-4XX SERIES

With its large measuring range, unrestricted scan angle and high angular resolution the LASE 3000D-4XX Series is suitable for a huge variety of industries and applications such as:

- » Measurement of dimensions, profiles or levels of objects and environments
- » Object & Truck Positioning
- » Area surveillance
- » Collision Prevention
- » Object protection
- » Bulk material measurement at heaps, piles, bunkers or trucks

## THE SENSOR

The LASE3000D-400 offers 360° x 90° field of view, making it perfect for yard cranes, autonomous operations, and safety applications. Its high resolution, long-range capabilities, and cost-effectiveness make it a reliable choice for diverse use cases.

LASE offers multilayer sensors in three different resolution options: 32, 64, and 128 vertical scan planes. Higher resolution with more amounts of scan planes enables better perception and detection performance at longer ranges. In addition to resolution LASE offers scan plane configuration options for the 32 and 64 scan plane sensors; standard (all scan planes distributed over the full vertical opening angle), below horizon (all scan planes on the bottom half of the field of view), and above horizon (all scan planes on the top half of the field of view).

- » Multilayer laser scanner
  - >> Adjusting support
  - >> Junction box
  - >> Different cable length



## SCOPE OF DELIVERY

- » Operating instruction
- » SW Applications

## THE FEATURES

- ✓ Contactless long range 3D profile measurement
  - » Multiple scan planes
  - » Small rugged design
- ✓ Range of up to 400 m on dark natural surfaces
- ✓ Range of up to 200 m on natural surfaces
- ✓ Scan area up to 90° x 360°
- ✓ Interfaces: Ethernet TCP/IP, RS-232, CAN-Bus
- ✓ Rugged construction type to IP 65

## THE BENEFITS

- ✓ Real time 3D image
  - » Multifunctional
- ✓ Unique stable object detection
- ✓ Self-test incorporated
- ✓ User friendly software
- ✓ Simple installation
- ✓ Outdoor applicable due to integrated heating



# TECHNICAL DATA: LASE 3000D-4XX SERIES

LASE 3000D-4XX	-400	-410	-420
DISTANCE MEASUREMENT new Rev. 7.1			
Max. Distance(80%)	100m (50m)	200m (120m)	400m (210m)
Max. Distance(10%)	35m (20m)	90m (45m)	200m (80m)
Min. Distance	0,5m (0,3m)	0,5m (0,3m)	0,8m (1m)
Accuracy	up to 5mm (0,3–1m 20mm, 1–10m 10mm, 10-15m 15mm, >15m 50mm)	up to 7mm (0,3–1m 20mm, 1–10m 10mm, 10-15m 15mm, >15m 50mm)	up to 20mm (1–30m 25mm, 30-60m 40mm, >60m 80mm)
Interface	UDP + TCP/IP 1000MBit/s		
Temperaturerange	-40°C ... +60°C (+55°C)		
Scanning frequency	10Hz / 20Hz (depending on number of measurement points)		
OPTICAL PERFORMANCE			
Vertical Resolution	32, 64, or 128 channels		
Horizontal Resolution	512, 1024, or 2048 (configurable)		
Field of View	Vertical: 90° (+45° to -45°) Horizontal: 360°	Vertical: 45° (+22.5° to -22.5°) Horizontal: 360°	Vertical: 22.5° (+11.25° to -11.25°) Horizontal: 360°
Angular Sampling Accuracy	Vertical: ±0.01° / Horizontal: ±0.01°		
Range Resolution	0.1 cm Note: For Low Data Rate Profile the Range Resolution = 0.8cm		
# of Returns	2 (strongest, second strongest)		
LASER			
Laser Product Class	Class 1 eye-safe per IEC/EN 60825-1: 2014		
Laser Wavelength	865 nm		
LIDAR OUTPUT			
Connection	UDP over gigabit Ethernet		
Points Per Second	1,310,720 (32 channel) 2,621,440 (64 channel) 5,242,880 (128 channel)	655,360 (32 channel) 1,310,720 (64 channel) 2,621,440 (128 channel)	
IMU OUTPUT			
Connection	UDP over 1000Base-T or 1000Base-T1		
Samples Per Second	100		
Data Per Sample	3 axis gyro, 3 axis accelerometer		
CONTROL INTERFACE			
Connection	TCP and HTTP APIs		
Lidar Operating Modes	Hardware-triggered angle firing (guaranteed fixed resolution per rotation): • x 512 @ 10 Hz or 20 Hz • x 1024 @ 10 Hz or 20 Hz • x 2048 @ 10 Hz		
MECHANICAL/ELECTRICAL			
Power Consumption	22 W (peak at start-up)		28 W (if operating below 40 °C)
Connector	Proprietary pluggable connector (Power + data + DIO)		
Operating Voltage	24 V +/- 20%		24 V nominal
Dimensions	Diameter: 87 mm (3.42 in) Height: • Without cap: 58.35 mm (2.3 in) • With thermal cap: 74.2 mm (2.9 in)		Diameter: 119.6 mm (4.71 in) Height: 98.9 mm (3.89 in)
Weight	Without cap: 430 g (15.1 oz) With radial cap: 500 g (17.6 oz) With halo cap: 445 g (15.6 oz)	Without cap: 420 g (14.8 oz) With radial cap: 495 g (17.4 oz) With halo cap: 440 g (15.5 oz)	1100 g (38.8 oz)
Mounting	Bottom: 4x M3 screws, 2x locating 2 mm pin holes Top: 4x M3 screws, 4x locating 2 mm pin holes, 1x M6 screw		Bottom: 4x M3 screws, 2x locating 2 mm pin holes, 4x M4 screws, 2x locating 3 mm pin holes, 4x M6 screws Top: 4x M4 screws, 4x locating 3mm pin holes, 1x M6 Screw
OPERATIONAL			
Storage Temperature	-40 °C to +105 °C		
Ingress Protection	IP68 (1m submersion for 1 hour, with I/O cable attached) IP69K (with I/O cable attached)		
Compliance	For US Laser Safety: • IEC/EN 60825-1:2014 Class 1 eye safe • FDA US 21CFR1040 Notice 56 Class 1  Product Safety: • UL 62368-1 • CSA 22.2 No. 62368-1-19  EMC: FCC 47CFR Part 15, Subpart B, Class A		For EU Laser Safety: IEC/EN 60825-1:2014 Class 1 eye safe  Product Safety: EN/IEC 62368-1  EMC: • EN 55032:2012/AC 2013; CISPR 32:2015 • EN 55024:2010; CISPR 24:2010 • EN 61000-3-2:2014 • EN 61000-3-3:2013