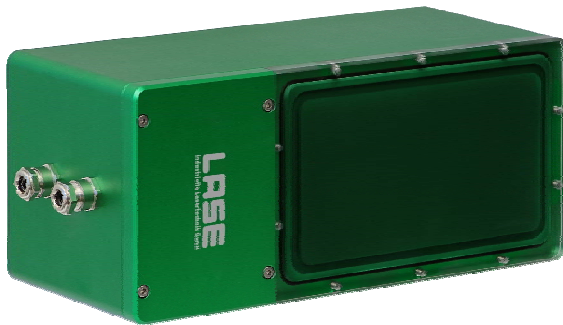




LASE 2000 R

2D Radar Scanner

LASE
Industrielle Lasertechnik GmbH

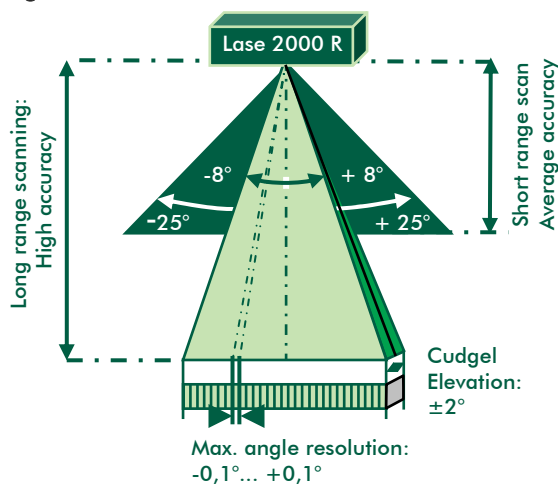


General characteristics:

- Contactless detection of surface profiles
- Short- and long-range scanning
- High accuracy, high resolution, high measuring rate
- Detection of fine-grained material
- Recognition of steeply angle of repose
- Operation in raw industrial environments with dust and fog
- Rugged construction- IP65
- Simple Installation in each installation position
- Ethernet Interface

Extended characteristics of the 2D sensors

- Short-range scanning with large opening angle
- Long-range scanning with high accuracy
- A 3D-model of the environment can be created by swivelling the sensor
- Extended operating temperature $-40\text{ }^{\circ}\text{C}$ to $+80\text{ }^{\circ}\text{C}$
- Configuration software inclusive



Short description:

The LASE 2000 R Sensor is an advanced and compact 2D Radar scanner for applications in industrial environments. The sensor doesn't collect one-dimensional distance, it records two-dimensional surface profiles. If the scanner will be swivelled or moved, it is even possible to create a 3D modell of the environment.

Due to the high operating frequency range of 77 GHz, the scanner is able to recognise fine-grained material, also like steep bulk material angle. This advantage is particularly noticeable in non-round silos, in which the bulk material is distributed unevenly.

The scan range with high accuracy for distances up to 100 m in an opening angle of 16° is supplemented by a scanning close-up range (up to 50 m) with an aperture angle of 50° and medium distance accuracy. Compared to the laser measurement technology the 2D radar scanner is also useable in very bad environmental conditions like dust, fog, rain or snow. Especially in these situations the machine operator receives the best possible support by this technology.

With the big measuring range and the high scan rate (15 times per second) the devices can be used in various industries and for very different tasks:

- Measurement of length, width, height, level and position of objects and environments
- Measurement of slabs and coils in the steel industry
- Detection of surface profiles and collision warnings
- Level measurement on finest bulk and faster detection of the bulk angle
- Creation of 3D-models of the environment

Technical Data

General data	
Radar principle	Pulse compression radar
Transmission frequency	76 – 77 GHz (free license)
Average transmission power	Max. < 10 mW
Scan frequency	66 mx (15 Hz)
Antenna aperture angle	± 2° (4° absolute)
Adjustment (A height difference can arise when turning the reflector)	± 16° (32° absolute)
Error and error detection	Status display with sensor voltage and error report counter

Measuring range	Short-range scan		Long-range scan	
	Measuring range	Accuracy*	Measuring range	Accuracy*
Distance	15 m	± 0,10 m	50 m	± 0,05 m
	30 m	± 0,20 m	100 m	± 0,25 m
Angle	50°	0,5°	16°	0,1°
Intensity	+ 15 dB ... – 40 dB	1 dB	+ 15 dB ... – 40 dB	1 dB

*The accuracy is dependent from the installed equipments at the measuring point as well as the type of material (coal, cement, bricks, sand ...)

Specifications	
Power supply	9 ... 27 V DC
Demand	8 W
Max. cable length	130 m
Interface	Ethernet 100 Mbit/s
Operating temperature	- 40 ... + 80 °C
Mechanical vibration	<i>RMS</i> speed-up 30 m/s ²
Mechanical shock	50 g
Dimensions	325 mm x 132 mm x 127 mm
Weight Sensor module	500 g
Weight housing	6470 g
Protection class	IP 67

Approval		
R&TTE CE 0682	Health: Safety: EMV and Radio spectrum:	EN 50413 (1999/519/EC) EN 60950 EN 301091-1
FCC Rule		Parts 15.253

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V:/Dokumentation/Radar/DB LASE 2000R

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