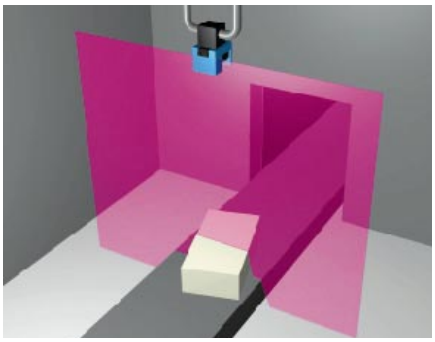
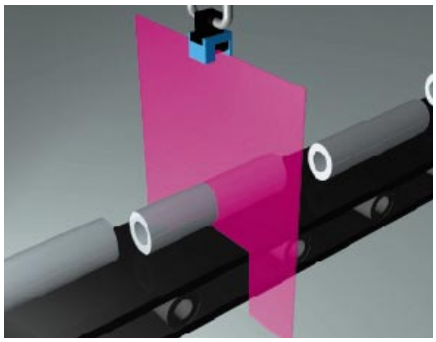
PRODUCT INFORMATION

Laser Measurement System LMS 200

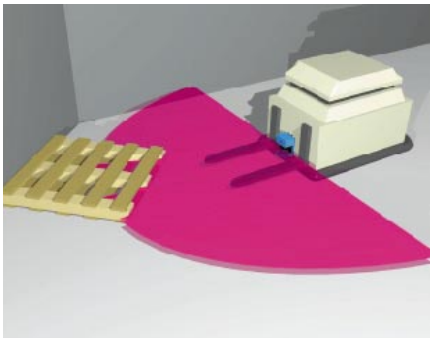
High-resolution laser measurement system for:
Measuring objects,
Determining position,
Monitoring areas.



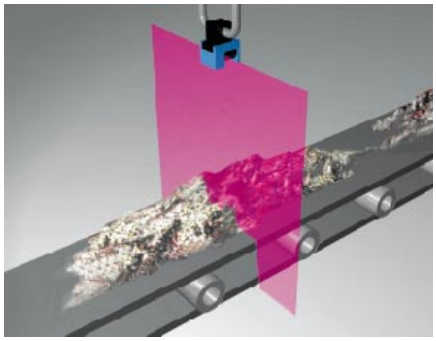
Measurement of volume



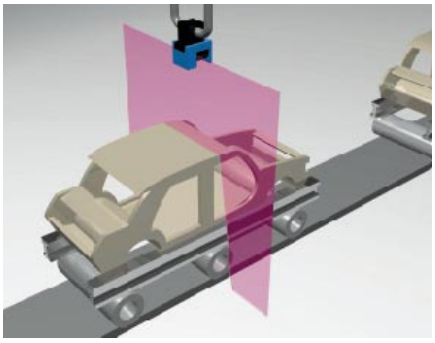
Measurement of objects/parts



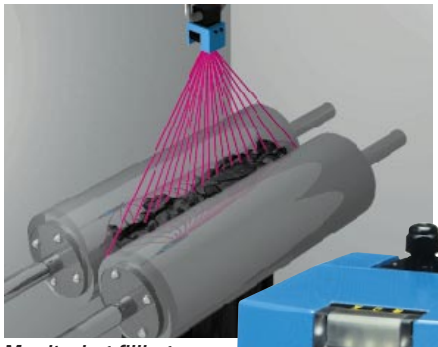
Navigational support



Measurement of bulk materials



Classification of objects



Monitoring filling quantity for calender rollers

SICK
optic electronic

Using innovative laser measurement technology for solving problems

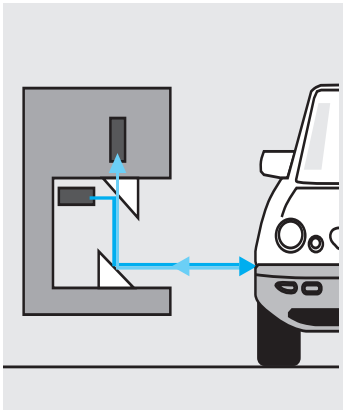
The LMS 200 proximity laser scanner is a measurement system that works without contact by scanning its surroundings in two dimensions (laser radar). Because it is a scanning system, neither reflectors nor positional markers are required. The LMS 200 high-resolution laser measurement system solves measurement functions which have, up to now, been impossible or could only be achieved with great difficulty.

The system carries out measurement functions for:

- Measuring objects
- Determining position
- Monitoring areas

The operating principle

The LMS 200 operates by measuring the time of flight of light pulses:
A pulsed laser beam is transmitted. If it meets an object it is reflected and the reflection is registered in the scanner's receiver. The time between emission and reception of the impulse is directly proportional to the distance between the scanner and the object (time of flight). The pulsed laser beam is deflected by an internal rotating mirror so that a fan-shaped scan is made of the surrounding area. The contour of the target area is determined from the sequence of impulses received. The measurement data is available for further evaluation in real time via a serial interface.

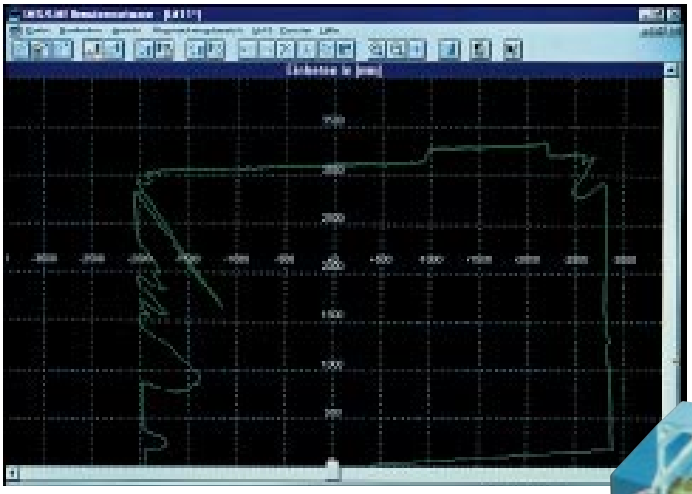


LMS 200 operating principle

Highly functional – Highly applicable

The method of measurement together with its high degree of functionality make the LMS 200 enormously practical for the user. Its principal characteristics and advantages include, for example:

- High measurement resolution (10 mm resolution)
- Contact-free measurement
- Target objects require no reflectors or markings
- Target objects require no special reflective properties
- High scanning frequency (up to 75 Hz)
- Transfer of measurement data in real time
- Active system, no illumination of target objects necessary
- Measurements possible over long distances
- Compact device construction



LMS 200 standard software user interface

Highly versatile

A decisive advantage of this method of measurement is that any objects, regardless of their shape, colour or surface structure, can be measured without any contact. Even if target objects have different reflective properties, up to a range of 20 m this can be ignored.

LMS 200 laser scanner

The LMS 200 offers a wide spectrum of applications

Precisely determined, two-dimensional contour data on the target object can be processed externally in a standard or customer-specific evaluation unit to combine this data with other known quantities (e.g. the speed of a conveyor belt). In this way further object parameters can easily be determined, e.g. volumes, relative positions, etc.

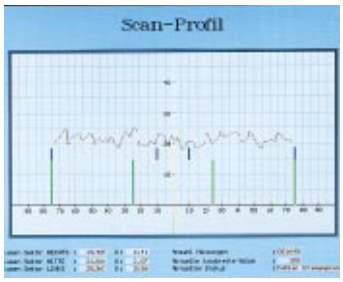
Measurement of objects

- Determination of object volumes (e.g. parcels, pallets, food products, etc)
- Determination of the volume of bulk materials (e.g. material handling technology, etc)
- Monitoring filling of calender systems
- Monitoring slack (e.g. in the foil industry, etc)
- Classification of objects (e.g. car bodies, containers, etc)
- Monitoring storage capacity (e.g. high bay warehouses, etc)
- Indoor space measurement (e.g. kitchen dimensions, etc)
- Measurement in the food industry (e.g. fish sizes, etc)
- and many more

Measurement of pallets

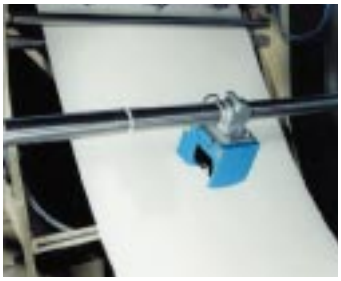
Measurement of parcels

Bulk material measurement Refuse incineration



Evaluation of filling of calender (customer-specific evaluation)

Standard evaluation of bulk material Bulkscan LMI 101



Mounting for monitoring slack

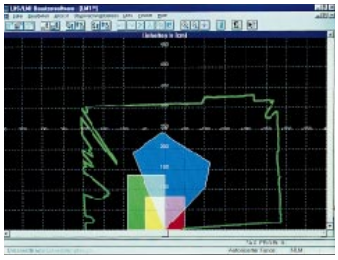
Positioning

- Determining the position of objects
- Navigational support (e.g. robots)
- Assistance with docking or handling procedures
- and many more

Service robot

Monitoring areas

- Collision prevention
- Monitoring projection of objects
- Preventing access to buildings/ spaces
- Counting people
- and many more



LMS 200 monitoring fields Standard user software

Technical data

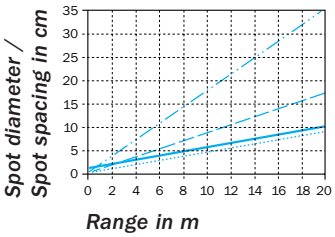
General		
Range	max. 150 m	
Range (without supplementary reflectors)	up to 30 m	
Range with minimum reflectivity 1.8%	4 m	
Resolution	10 mm	
Statistical error	±15 mm (mm-resolution) ±4 cm (cm-resolution)	range 1 to 8 m reflectivity: 10 %-10,000 % range 8 to 20 m reflectivity: 30 %-10,000 %
Angular resolution	100° Scan: 0.25°/0.5°/1°, 180° Scan: 0.5°/1° configuration using software	
Response times	52/26/13 ms	depending on angular resolution
Interface	Serial RS-422 or RS-232 switchable	
Measurement data	Real-time transfer, binary data	
Data transfer rate	9.6/19.2/38.4/500 Kbaud	
Direct switching outputs	3 x PNP outputs, typ. 24 V DC, assigned to 3 monitored areas	
Voltage supply (electronic)	24 VDC ± 15%	
Laser protection class	1	

Indoor version LMS 200-30106	
Enclosure rating	IP 65
Maximum scanning angle	180°
Ambient operating temperature	0 to 50 °C
Storage temperature	-30 to 70 °C
Dimensions	155 x 185 x 156 mm (W x H x D)
Weight	4.5 kg
Power consumption	max. 17.5 W

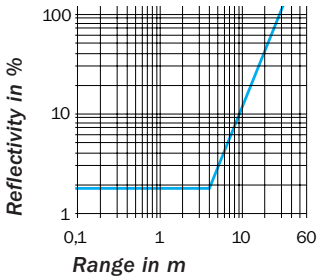
Outdoor version LMS 220-30106	
Enclosure rating	IP 67
Maximum scanning angle	180°
Ambient operating temperature	-30 to +50 °C
Storage temperature	-30 to +70 °C
Dimensions	352 x 266 x 194.5 mm (W x H x D)
Weight	9 kg
Power consumption	max. 17.5 W, max. 150 W with heating

Diagrams

Standard variant
(LMS 200-30106)
(LMS 220-30106)



Spot diameter
Spot spacing for 0.25°
Spot spacing for 0.5°
Spot spacing for 1°



Indoor LMS 200

Outdoor LMS 220

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