

BROCHURE



TRUCK VOLUME MEASUREMENT

LaseTVM-3D-S (Static)

LaseTVM-3D-M (Motion)



LASE
Industrielle Lasertechnik GmbH



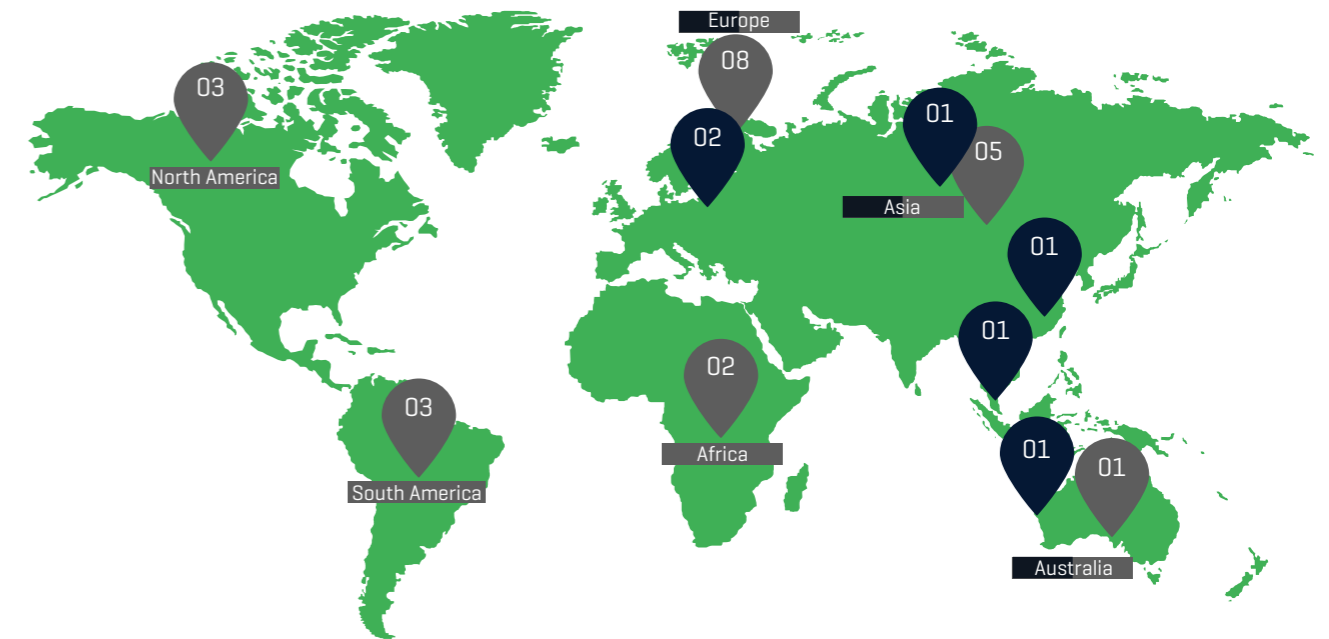
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LASE WORLDWIDE

LASE is a global player in the field of industrial laser measurement technology. Our solutions support the logistic processes of companies, they ensure the automatic handling of products and provide exact dimensional data of products and goods. The products are used, for example, in freight logistics, mining, the timber industry and many other areas. We are represented worldwide by our own offices or by cooperation partners. If you have any questions about our products, please contact us, we look forward to hearing from you.



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LaseTVM-Line

Description

The **LaseTVM** systems are high precision volumetric bulk material measurement systems for road trucks or mining trucks. The LaseTVM product family consists of the products **LaseTVM-S** and **LaseTVM-M**. With the LaseTVM-S [Static] version, the truck bed is placed centrally underneath the sensor[s]. A measurement is made while the truck is at a standstill. With the LaseTVM-M [Motion], the truck drives through the measuring system without stopping and the measurement is made in transit. For both variants the laser scanners are installed above the driveway. The LaseTVM-S variant uses a 3D laser scanner that generates a 3D profile of the loading area when the truck is at a standstill. With the LaseTVM-M variant, two 2D laser scanners are arranged 90° offset to each other - looking down. One 2D laser scanner measures the position of the measured object [truck with loading area] in the passage, the second 2D laser scanner generates a transverse profile [transverse to the direction of travel]. By combining both sensor data, a 3D profile of the loading area is generated and the volume is calculated from this.

In both measuring systems it is necessary to do a measurement in empty and filled condition. Both profiles are saved and then the calculation is performed, whereby the empty 3D profile is subtracted from the full 3D profile. The difference between the two volumes is the volume of the transported bulk material. A truck with one or also with two loading areas can be measured. With the LaseTVM-S variant, a second 3D laser scanner is required for this case. Both product variants are available as a kit, whereby there is a basic kit with the sensors, cable set and the evaluation unit including power supply [in a control cabinet]. In addition, there are various modules that can be optionally purchased. **Module identification (number plate)** With this module an OCR camera [OCR = Optical Character Recognition] is installed next to the driveway at the height of the number plates, from where the identity of the vehicle is recorded in the driveway or in the passageway. **Module Identification [RFID]** For this, an RFID tag [Radio Frequency Identification] is attached to the vehicle. Next to or in the measuring head above the lane is the RFID reader, which records the identity of the vehicle in the driveway.

LaseTVM-Versions



LaseTVM-3D-S [Static]



LaseTVM-3D-M [Motion]

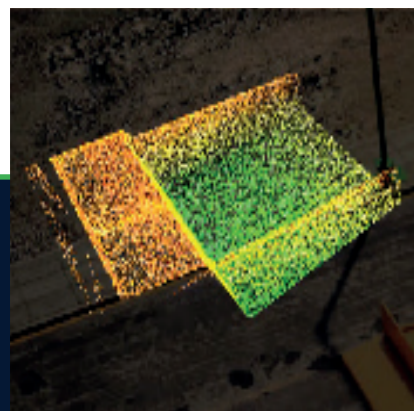
LaseTVM-3D-S



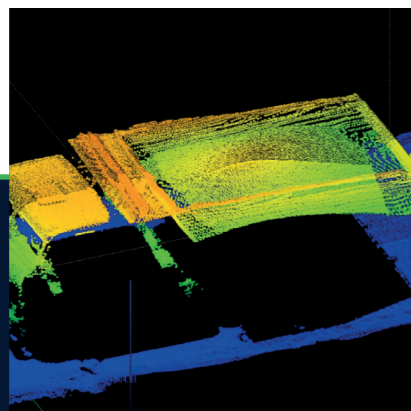
LaseTVM-3D-M



LaseTVM-3D-S [Static]



The 3D scanning area measures the loading area of the truck.



The graphic shows the 3D point cloud of the loaded truck.

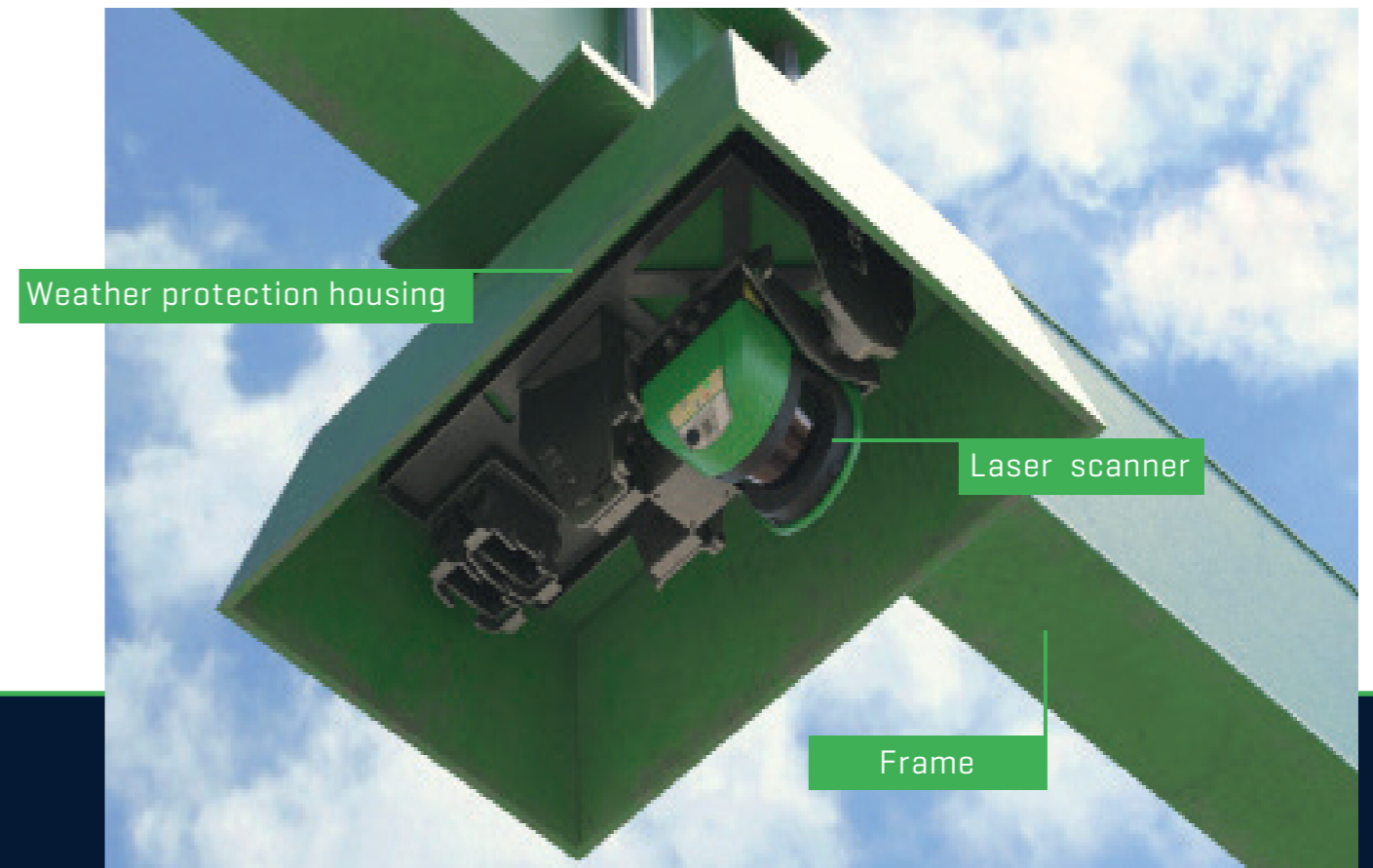


3D laser scanner measures the volume in the truck.

DESCRIPTION

The **LaseTVM-3D-S [Static]** system is used for measurements when the truck is at a standstill. LASE3000D-C2-118 3D laser scanners are used for volume measurements while the truck is standing still. These high-precision sensors allow an exact measurement of the bulk material volume. The sensors send the 3D measurement data to an evaluation unit which runs the software for calculating the volume. The measuring system can consist of one or two sensors. Two sensors are required if the loading area is long or if a trailer is used.

The sensors are attached to a portal or a pillar with a jib, at a height of approx. 7 m. When the truck is within the measuring area, the 3D profile measurement is performed. This takes about 10 s. The measurement is always made in two steps: an empty 3D profile measurement and a full 3D profile measurement. The difference between the two measurements is the volume of the bulk material. Several measuring stations can also work in combination. In this case there is a full and empty measurement at different locations. It is also possible to save the empty profiles of a vehicle, so that afterwards only the full measurements have to be taken. The browser-based commissioning tool enables commissioning and error analysis at the measuring station via a handheld device [mobile phone, tablet - the connection is via Wifi].



Precise volume measurement



Fair invoicing
[good customer / supplier relationship]



Automated process



Management tool



Reliable and non-manipulable



Excellent price/
performance ratio /
fast return on investment

LaseTVM-3D-S (Static)

Technical data LaseTVM-3D-S (Static)



HOW DOES IT WORK ?




SCAN ME

and watch our product video



 <https://bit.ly/3cmt3uk>

- 
EXPERIENCE
 30 years of experience in laser measurement technology for volumetric measurements in mining, steel, bulk material logistics, ports etc.
- 
RELIABILITY
 Reproducible, non-manipulable measurements, exclusion of the human error factor.
- 
ACCURACY
 Exact determination of volume, excludes inaccuracies due to material moisture.

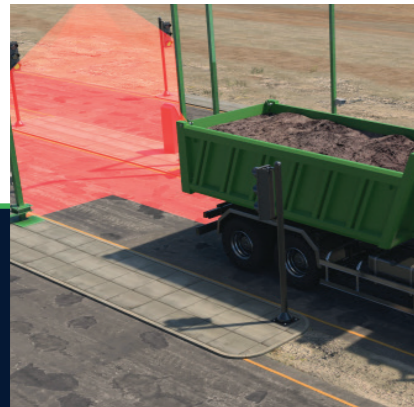
BASIC PACKAGE

Laser scanner	1 or 2	Depending on the length of the loading area
Laser scanner type	LASE3000D-C2-118	3D-Laser scanner
Measurement procedure	at a standstill [Static]	Truck is in the measuring area
Material	Bulk Material	Sand, soil, gravel, stones, wood chippings, etc.
Accuracy	+/- 98%	Depending on quantity and area size
Measuring time	ca. 10s	
Interface	Ethernet TCP/IP	Other interfaces customer-specific
Temperature	-25°C - + 50°C	Other temperature ranges on request
Supply	230 VAC	

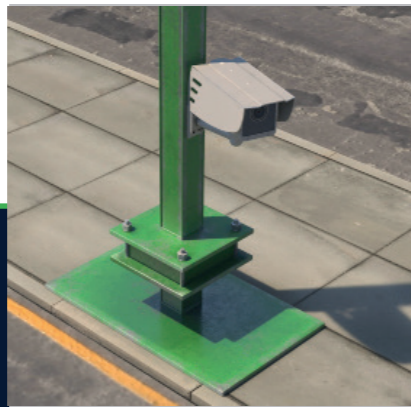
OPTIONS

Identification OCR	1	OCR-camera next to lane
Identification RFID	1	On the truck and RFID reader next to the lane
Documentation camera	1	Images of the loading area are generated
Process control	1	Digital display behind the measuring system
Kiosk	1	Check-in/check-out via communication column
Web portal	1	Management tool for online process control
Portal	1	U-frame [7m high and 4.5m wide]
SWAN sensor holder	1	Sensor holder [pillar with bracket]
Mobile SWAN	1	Sensor holder [pillar with boom] mounted on a trailer [availability soon]

LaseTVM-3D-M (Motion)



Two laser scanners measure the truck's freight as it drives through.



The OCR camera is mounted at the bottom of the frame and scans the licence plates of the trucks.

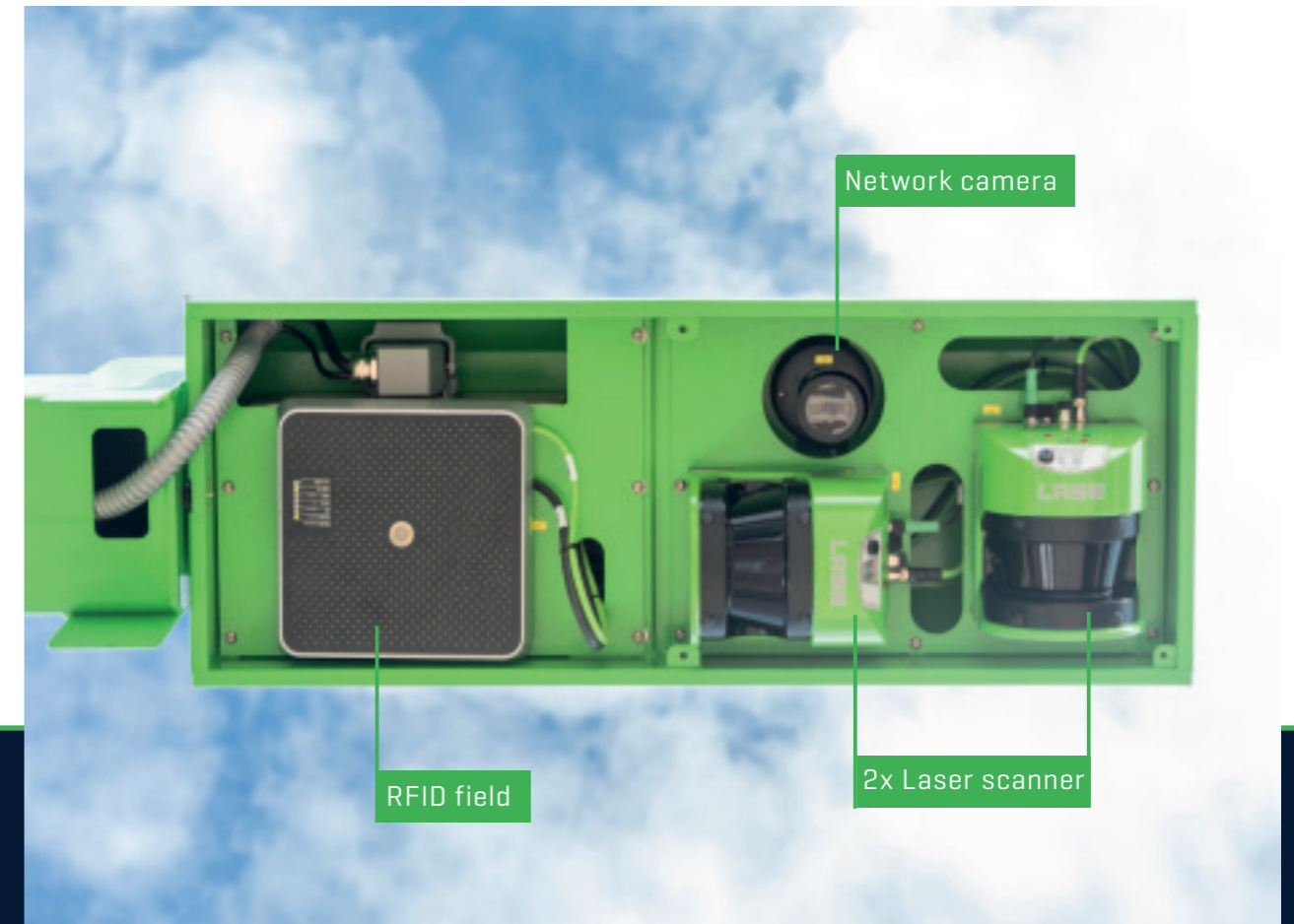


The two laser scanners measure the volume in transit.

DESCRIPTION

The **LaseTVM-3D-M (Motion)** system is used for measurements of trucks in transit. Two LASE2000D-118 2D laser scanners are used for dynamic volume measurement. These high-precision sensors allow an exact measurement of the bulk material volume. The sensors send the measured data to an evaluation unit on which the software for calculating the volume runs. The sensors are mounted on a portal or a pillar with a jib, at a height of approx. 7 m.

When the truck drives through the measuring portal, one 2D laser scanner is responsible for determining the position of the truck and the loading area and the second 2D laser scanner measures the profile of the vehicle at right angles to the direction of travel. By combining the two laser scanners' measurement data, a 3D profile of the vehicles is generated. The measurement always takes place in two steps: an empty 3D profile measurement and a full 3D profile measurement. The difference between the two measurements is the volume of the bulk material. Several measuring stations can also work together. There is a full and empty measurement at different locations. It is also possible to save the empty profiles for a vehicle, so that only the full measurements have to be made afterwards.



Precise volume measurement



Fair invoicing
[good customer / supplier relationship]



Automated process



Management tool



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LaseTVM-3D-M (Motion)



HOW DOES IT WORK ?



SCAN ME

and watch our product video



 <https://bit.ly/3cmt3uk>

-  **EXPERIENCE**
 30 years of experience in laser measurement technology for volumetric measurements in mining, steel, bulk material logistics, ports etc.
-  **RELIABILITY**
 Reproducible, non-manipulable measurements, exclusion of the human error factor.
-  **ACCURACY**
 Exact determination of volume, excludes inaccuracies due to material moisture.

Technical data LaseTVM-3D-M (Motion)

BASIC PACKAGE		
Laser scanner	2	Depending on the length of the loading area
Laser scanner type	LASE2000D-118	2D-Laser scanner
Measurement procedure	in transit	Truck drives through the measuring range
Material	Bulk material	Sand, soil, gravel, stones, wood chippings, etc.
Accuracy	+/- 98%	Depending on quantity and area size
Driving speed	< 5km/h	
Interface	Ethernet TCP/IP	Other interfaces customer-specific
Temperature	-25°C - + 50°C	Other temperature ranges on request
Supply	230 VAC	

OPTIONS		
Identification OCR	1	OCR-camera next to lane
Identification RFID	1	On the truck and RFID reader next to the lane
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Portal	1	U-frame [7m high and 4.5m wide]
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