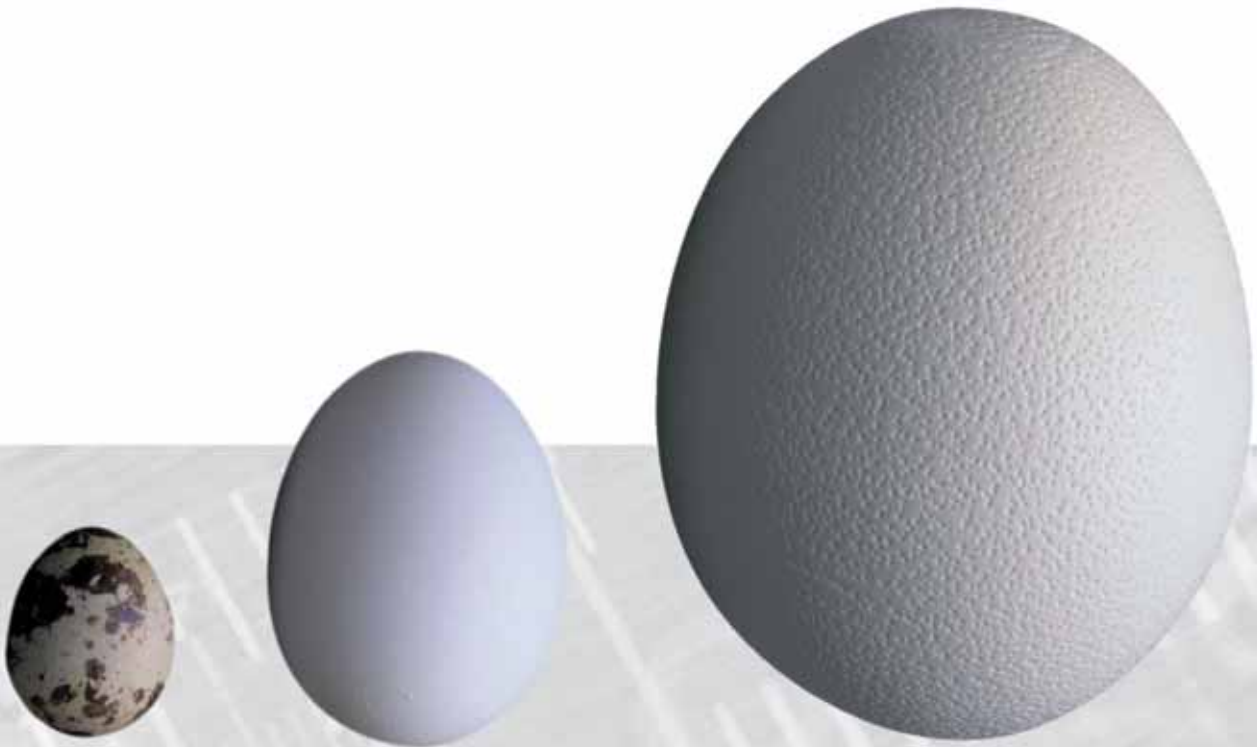




## Volume Measurement Systems from SICK.


The new benchmark for  
reliable object dimensioning

**No two eggs are the same.**



## **Volume Measurement Systems by SICK**

Whatever the shape or size, accurate volume measurement is the basis for correct decision making. As a technological leader in barcode identification systems, SICK offers you a system that sets new standards of performance, measurement accuracy and reliability. The VMS is our response to the challenges of a global market, in which one simply cannot afford inaccurate volume determination.



**The world of logistics and parcel handling  
is gaining speed.**

**Keep up with it!**



**SICK's Volume Measurement System (VMS) –  
a new dimension in measuring.**

- Measurement of length, width and height of objects
- Calculation of real volume
- Calculation of smallest box enclosing the object (box-volume)
- Measurement of all object shapes
- Legal-for-trade certified

## Optimize parcel handling, improve measurement reliability and reduce costs.

**SICK's VMS offers you measurably greater benefits:**

- Small, compact design
- Easy installation
- Fully integrated unit
- No auxiliary evaluation unit required
- Optimized application software
- Low-maintenance system (short MTTR through plug & play unit exchange)
- Comprehensive accessory sets



VMS for parcel dimensioning



VMS for control of real versus expected volume



VMS for classification according to volume and size

### Versions

- VMS 420  
A standard solution for determining parcel and freight volume on conveyors. Dual head configuration.
- VMS 520  
System for legal-for-trade certified measurement data. Dual head configuration.



### Why SICK's VMS pays for itself within the shortest of times ...

Often volume and dimension data is based on vague and inaccurate indications. A legal-for-trade certified dimension check enables parcel service providers to claim supplementary shipment charges from their customers (Revenue Recovery). The investment for the VMS system can be amortized in a matter of a few weeks or months.



VMS for acceleration of storage processes



VMS for optimization of logistics processes



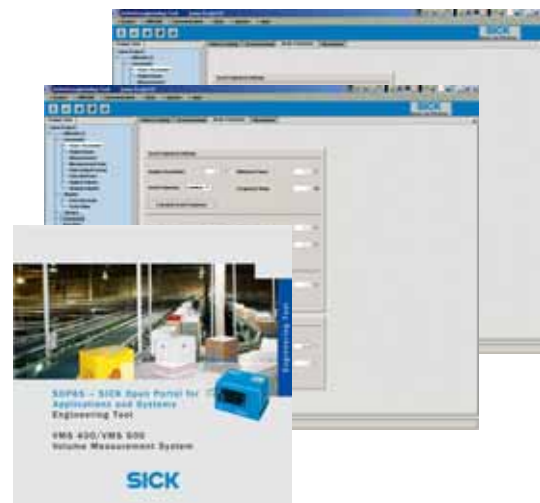
VMS for optimum usage of cargo capacity

**Application sample:**  
**A typical dimensioning solution with VMS**

- Singulated parcels pass on a flat conveyor system at a transport speed of max. 2 m/s
- Parcel volume measurement must be legal-for-trade
- The measured volume data is supplied to the system integrator's host system
- Volume, weight and identification data for each parcel is passed to the customer's host system for subsequent processing and evaluation
- To fulfil the legal-for-trade requirements, all collected data is stored in the alibi-storage of the system integrator's control unit

**User-friendly through modern setup and monitoring software**

- Easy parameter setup and diagnosis via common serial interface
- Comprehensive visualization screens
- Intuitive user guidance
- Self-diagnosis and comprehensive monitoring tools



## VMS 520: Legal-for-trade on the base of the OIML standard.

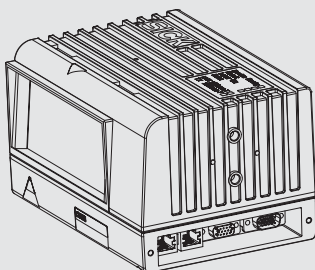
Measuring requires trust. The Volume Measurement System VMS 520 is certified “legal-for-trade” according to the standard OIML (International Organisation for Legal Metrology) recommendation R129 for “multi-dimensional measuring instruments”. This is the base for system integrators to create Volume & Weight Analyser Systems, which comply with national regulations for legal-for-trade measurements.



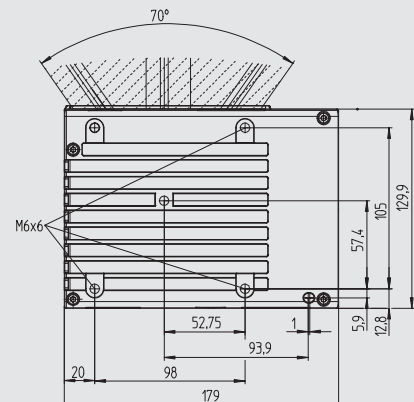
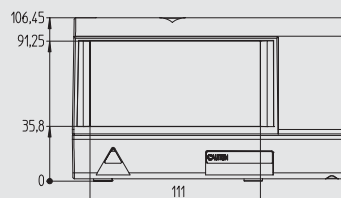
Tested and certified by the OIML-R129 accredited legal body NMI, Netherlands Meetinstituut in Dordrecht. “OIML Certificate of conformity no. R129/2000-NL-04-.01”. Since 2003, the VMS 520 system is officially OIML-listed.



	L	W	H
Object size max.	2,000 mm	1,000 mm	1,600 mm
Object size min.	50 mm	50 mm	50 mm
Scale value d	+/-5 mm	+/-5 mm	+/-5 mm
Max. transport speed	2 m/s (120 m/min)		



Abmessungen in mm



## VMS 410/510 – the new single-head Volume Measurement System for cuboid objects.

The VMS 410/510 from SICK: designed for measuring the volumes of cuboid objects or packages on flat conveyor belts, etc. Rapid installation, and simple alignment and commissioning are the advantages of this single sensor solution from SICK. This single-head Volume Measurement System is also available as a certified version: the VMS 510 (Certification planned for mid-2005).



## VMS 200 – The two-scanner system for extra-large objects

The VMS 200 from SICK meets your automatic volume measuring needs involving extra-large objects, packages, pallets or flight baggage. The system scans the transported objects, reliably calculates the volume data and is also suitable for outdoor applications.



## An overview of SICK's Volume Measurement Systems.



Type	VMS 420/520	
Design	2-scanner solution	
Light source	Laser diode, red, wavelength: 650 nm	
Laser type	Class 2	
Aperture angle	70°	
Detectable object shapes	Almost any shape Smallest object: 50 x 50 x 50 mm <sup>3</sup>	
Max. object size (L x W x H)	2,000 x 1,000 x 1,600 mm <sup>3</sup>	
Certified scale value, d	+/- 5 mm at 2 m/s	
Accuracy		
Min. object gap at v = 2 m/s	25 mm	
Max. transport speed	VMS 420: 3 m/s; VMS 520: 2 m/s, constant or variable	
Host interfaces	RS 232, RS 422 or Ethernet Connection to Bus systems on request	
Optical indicators	6 LEDs for status indication	
Output data	<ul style="list-style-type: none"> <li>• Max. dimensions (length, width, height)</li> <li>• Box volumes</li> <li>• Real volumes</li> <li>• Index</li> </ul>	
Operating voltage	24 V DC +/- 15 %, max. 2 A	
Housing	Die-cast aluminium	
EMC tests	Acc. to EN 61000-6-2:2001, EN 61000-6-4:2001	
Vibration/impact tests	Acc. to EN 60068-2-65, -27, -29, -64	
Weight per scanner	2.3 kg	
Temperature (operation/storage)	0 ... +40°C/-20 ... +70°C	





VMS 410/510		VMS 200	
	1-scanner solution		2-scanner solution
	Laser diode, red, wavelength: 650 nm		Laser diode, infrared, wavelength: 905 nm
	Class 2		Class 1
	70°		180°
	Cuboid objects Smallest object: 50 x 50 x 50 mm <sup>3</sup>		Almost any shape Smallest object: 100 x 100 x 100 mm <sup>3</sup>
	2,500 x 1,000 x 1,000 mm <sup>3</sup>		7,500 x 3,000 x 3,000 mm <sup>3</sup>
	+/- 10 mm at 2 m/s, +/- 5 mm at 1.3 m/s		
			+/- 20 mm at 2 m/s
	25 mm		≥ 100 mm
	Up to 2 m/s, constant or variable		Up to 2 m/s, constant or variable
	RS 232, RS 422 or Ethernet		RS 232, RS 422, connection to Bus systems on request
	6 LEDs for status indication		3 LEDs for status indication
	<ul style="list-style-type: none"> <li>• Maximum dimensions (length, width, height)</li> <li>• Box volumes</li> <li>• Index</li> </ul>		<ul style="list-style-type: none"> <li>• Maximum dimensions (length, width, height)</li> <li>• Box volumes</li> <li>• Real volumes</li> <li>• Angle of rotation</li> <li>• Index</li> </ul>
	24 V DC +/- 15 %, max. 2 A		24 V DC +/- 15 %, max. 2 A, 230 V AC (115 V AC)
	Die-cast aluminium		Die-cast aluminium
	Acc. to EN 61000-6-2:2001, EN 61000-6-4:2001		Acc. to EN 61000-6-2:2001, EN 61000-6-4:2001 etc.
	Acc. to EN 60068-2-65, -27, -29, -64		Acc. to EN 60068-2-65, -27, -29, -64
	2.3 kg		4.5 kg
	0 ... +40 °C/-20 ... +70 °C		0 ... +40 °C/-20 ... +70 °C

## RANGE OF EXPERTISE

### INDUSTRIAL SENSORS

Our complete range of sensors provides answers to suit any application in the field of automation. Even under rugged ambient conditions objects are reliably detected, counted and positioned in respect of their form, location and surface finish, as well as their distances established with pin-point accuracy.



### INDUSTRIAL SAFETY SYSTEMS

Comprehensive safeguarding of both personnel and machinery! As specialists in Sensor Technology, SICK develops and manufactures pioneering products for providing protection in hazardous zones, dangerous locations and for safeguarding access points. By providing services, which encompass all aspects of machine safety and security, SICK is setting new standards in Safety Technology.



### AUTO IDENT

Whether the tasks involve identification, handling, classification or volume measurement, innovative Auto Ident systems and laser measuring systems function extremely reliably, even under rapid cycle times. They conform to the latest Standards and can be simply and speedily integrated in all industrial environments and external applications.



### ANALYZERS AND PROCESS INSTRUMENTATION

System control, maintaining setpoints, optimising process control and monitoring the flow of materials – the instruments and services for Analysis and Process Measurement, supplied by SICK MAIHAK, are setting the standards for these applications in terms of Technology and Quality.



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