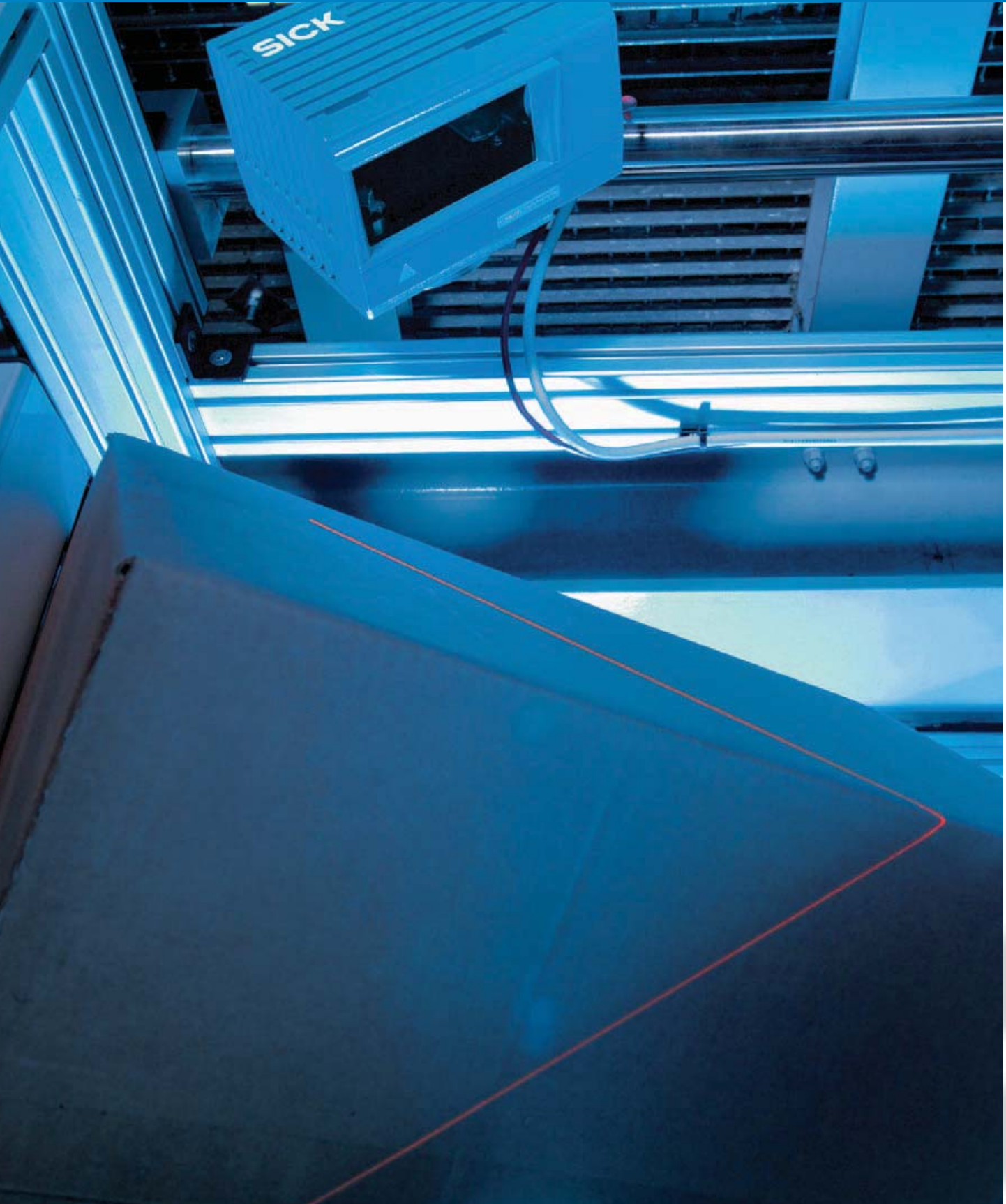


## Volume Measurement Systems





Regardless of size or shape: knowledge of the exact volumes of goods often worth real money. VMS Volume Measurement Systems from SICK detect the shape of almost any objects – even oversized ones. The volume is reliably calculated – calibrated if required – from the shape.

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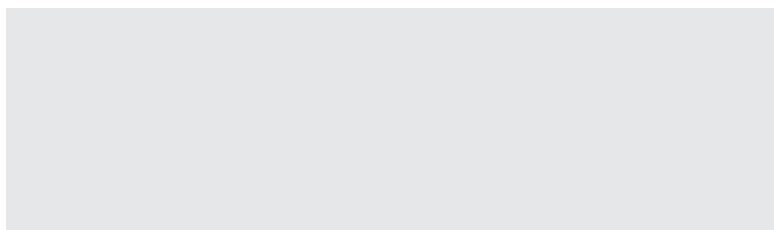
# Volume Measurement Systems

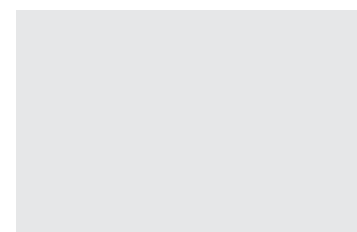
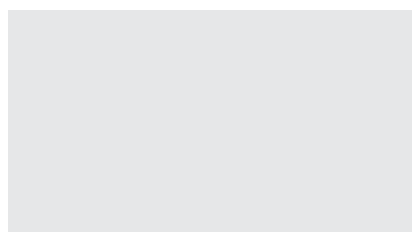
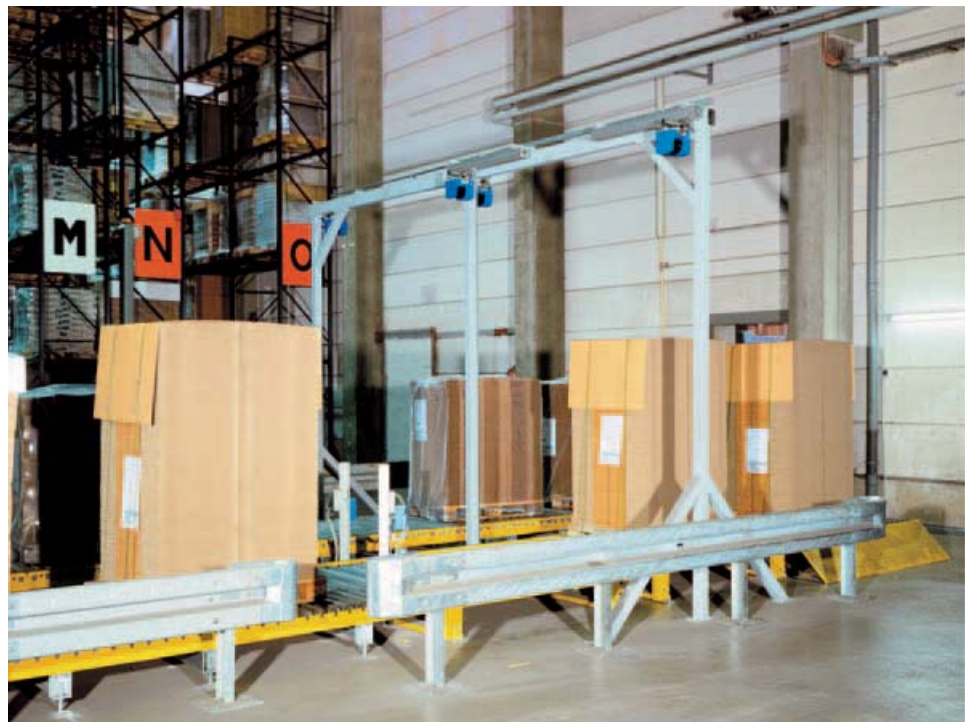




PRODUCT	VMS410/510	VMS420/520	VMS200
<b>Reading ranges</b>	<ul style="list-style-type: none"> <li>• Measurement of cubic objects</li> <li>• VMS410: 1 sensor</li> <li>• VMS510: 1 sensor, system OIML-R-129 and MID certified</li> </ul>	<ul style="list-style-type: none"> <li>• Measurement of cubic and non-cubic objects</li> <li>• VMS420: 2 sensors</li> <li>• VMS520: 2 sensors, system OIML-R-129 certified</li> </ul>	<ul style="list-style-type: none"> <li>• Measurement of cubic and non-cubic objects</li> <li>• System with 2 sensors LMS200 and control cabinet including IPC and power supply</li> </ul>
<b>Application areas</b>	<ul style="list-style-type: none"> <li>• Parcel identification</li> <li>• Logistics &amp; distribution</li> <li>• Mail-order business</li> </ul>	<ul style="list-style-type: none"> <li>• Parcel identification</li> <li>• Logistics &amp; distribution</li> <li>• Mail-order business</li> </ul>	<ul style="list-style-type: none"> <li>• Luggage measurement</li> <li>• Pallet measurement</li> <li>• Logistics &amp; distribution</li> </ul>
<b>Technical data</b>	<p>Scanning frequency: Max. 500 Hz</p> <p>Operating voltage: 24 V DC <math>\pm</math> 15 %</p> <p>Data interfaces: RS-232/RS-422, Ethernet</p> <p>Switching inputs/outputs: 6 x IN/4 x OUT</p> <p>Dimensions: 179/130/106 mm</p> <p>Weight: 2.3 kg</p> <p>Enclosure rating: IP 54/IP 65</p>	<p>Scanning frequency: Max. 500 Hz</p> <p>Operating voltage: 24 V DC <math>\pm</math> 15 %</p> <p>Data interfaces: RS-232/RS-422, Ethernet</p> <p>Switching inputs/outputs: 6 x IN/4 x OUT</p> <p>Dimensions: 179/130/106 mm</p> <p>Weight: 4.6 kg (2 sensors)</p> <p>Enclosure rating: IP 54/IP 65</p>	<p>Scanning frequency: Max. 75 Hz</p> <p>Operating voltage: 115/230 V AC <math>\pm</math> 10 % / -15 %</p> <p>Data interfaces: RS-232/RS-422/485, Ethernet</p> <p>Switching inputs/outputs: 3 x IN/5 x OUT</p> <p>Dimensions: 155/210/156 mm (sensor) 600/478/373 mm (control cabinet)</p> <p>Weight: 9 kg (2 sensors)</p> <p>Enclosure rating: IP 65</p>
<b>Special features</b>	<ul style="list-style-type: none"> <li>• Object size (L x W x H): min. 50/50/50 mm (1.2 m/s) min. 100/100/50 mm (2 m/s) max. 2.5/1/1 m</li> <li>• Scale interval: d = 5 mm bei v = 1.2 m/s d = 10 mm bei v = 2.0 m/s</li> </ul>	<ul style="list-style-type: none"> <li>• Object size (L x W x H): min. 50/50/50 mm max. 2/1/1.6 m</li> <li>• Scale interval: d = 5 mm bei v = 3 m/s</li> </ul>	<ul style="list-style-type: none"> <li>• Object size (L x W x H): min. 100/100/100 mm max. 7.5/3/3 m</li> <li>• Accuracy typical <math>\pm</math>20 mm</li> </ul>
<b>Accessories</b>	<ul style="list-style-type: none"> <li>• SOPAS Engineering Tool Software</li> <li>• Mounting bracket, can be adjusted in 3 axes</li> <li>○ RDT400 Remote Diagnostic Software</li> <li>○ CDM420 connection module</li> <li>○ External parameter memory</li> <li>○ Reading trigger sensors</li> <li>○ Incremental encoder</li> </ul>	<ul style="list-style-type: none"> <li>• SOPAS Engineering Tool Software</li> <li>• 2 mounting brackets, can be adjusted in 3 axes</li> <li>○ RDT400 Remote Diagnostic Software</li> <li>○ CDM420 connection module</li> <li>○ External parameter memory</li> <li>○ Reading trigger sensors</li> <li>○ Incremental encoder</li> </ul>	<ul style="list-style-type: none"> <li>• 2 mounting brackets, can be adjusted in 3 axes</li> <li>○ Interface converter</li> <li>○ Gateways for PROFIBUS, DeviceNet and Ethernet</li> <li>○ Reading trigger sensors</li> <li>○ Incremental encoder</li> </ul>

- Standard
- Optional





# VMS410/510 – the new single-head Volume Measurement System for cuboid objects.



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 VMS510, certified according to the OIML standard.

## Your benefits:

- 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

## The VMS420/520 at a glance:

- 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

## Technical data

<b>Type</b>	<b>VMS410/510</b>
Design	1-scanner solution
Light source	Laser diode, red, wavelength 650 nm
Laser class	Class 2
Aperture angle	70°
Detectable object shapes	Cuboid objects, Smallest object: 50 mm x 50 mm x 50 mm
Max. object size (L x W x H)	2,500 mm x 1,000 mm x 1,000 mm
Certified scale value d	10 mm/10 mm/5 mm at 2 m/s, 5 mm/5 mm/5 mm at 1.2 m/s
Accuracy	±10 mm/±10 mm/±5 mm at 2 m/s, ±5 mm/±5 mm/±5 mm at 1.2 m/s
Min. object gap at v = 2 m/s	25 mm
Max. transport speed	Up to 2 m/s, constant or variable
Host interfaces	RS-232, RS-422 or Ethernet
Optical indicators	6 LEDs for status indication
Output data	- Maximum dimensions (length, width, height) - Box volumes - Index
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

## Order information

Type	Description	Order no.
VMS410-1000	Volume Measurement System, including: 1 x VMD410-1000 1 x Mounting bracket 2030421 1 x Configuration and diagnosis software SOPAS and operation manual on CD-ROM	1025985
VMS510-1000	Volume Measurement System, including: 1 x VMD510-1000 1 x Mounting bracket 2030421 1 x Configuration and diagnosis software SOPAS and operation manual on CD-ROM 1 x OIML-R129 sign (to be mounted at the machine)	1025986

## Accessories

Accessories can be found on Page 237

# VMS420/520

## The rapid system for almost all object shapes



When speed and precision are important: almost all object shapes can be accurately measured at up to 3 m/s on flat conveyor belts with the new VMS420/520. The robust two-head Volume Measurement System is also

available as a certified version: the VMS520 conforms with the MID European Measurement Directive and OIML R 129.

### Your benefits:

- 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

### The VMS420/520 at a glance:

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

## Technical data

<b>Type</b>	<b>VMS420/520</b>
Design	2-scanner solution
Light source	Laser diode, red, wavelength 650 nm
Laser class	2
Aperture angle	70°
Detectable object shapes	Almost any shape, Smallest object: 50 mm x 50 mm x 50 mm
Max. object size (L x W x H)	2,000 mm x 1,000 mm x 1,600 mm
Certified scale value d	5 mm at 3 m/s
Accuracy	±5 mm at 3 m/s
Min. object gap at v = 2 m/s	25 mm
Max. transport speed	VMS420: 3 m/s; VMS520: 3 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	- Maximum dimensions (length, width, height) - Box volumes - Real volumes - Index
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

## Order information

Type	Description	Order no.
VMS420-2000	Volume Measurement System, including: 2 x VMD420-2000 2 x Mounting bracket 2031041 1 x Configuration and diagnosis software SOPAS and operation manual on CD-ROM 1 x Communication cable VMD to VMD, 6026084	1041964
VMS520-2000	Volume Measurement System, including: 2 x VMD520-2000 2 x Mounting bracket 2031041 1 x Configuration and diagnosis software SOPAS and operation manual on CD-ROM 1 x Communication cable VMD to VMD, 6026084 1 x OIML R 129 sign MID	1041965

## Accessories

Accessories can be found on Page 238

# VMS200

## The two-scanner system for extra-large objects



The VMS200 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.

### Your benefits:

- 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

### The VMS200 at a glance:

- Small, compact design
- Easy installation
- Fully integrated unit
- Optimised application software
- Low-maintenance system (short MTTR through plug & play unit exchange)
- Comprehensive accessory sets

## Technical data

<b>Type</b>	<b>VMS200</b>
Design	2-scanner solution
Light source	Laser diode, red, wavelength 650 nm
Laser class	1
Aperture angle	180°
Detectable object shapes	Almost any shape, Smallest object: 100 mm x 100 mm x 100 mm
Max. object size (L x W x H)	7,500 mm x 3,000 mm x 3,000 mm
Accuracy	±20 mm at 2 m/s
Min. object gap at v = 2 m/s	≥ 100 mm
Max. transport speed	Up to 2 m/s, constant or variable
Host interfaces	RS-232, RS-422, connection to bus systems on request
Optical indicators	3 LEDs for status indication
Output data	- Maximum dimensions (length, width, height) - Box volumes - Real volumes - Angle of rotation - Index
Operating voltage	24 V DC ±15 %, max. 2 A, 230 V AC (115 V AC )
Housing	Die-cast aluminium
EMC tests	Acc. to EN 61000-6-2:2001, EN 61000-6-4:2001 et. al.
Vibration/impact tests	Acc. to EN 60068-2-65, -27, -29, -64
Weight per scanner	4.5 kg (Scanner)
Temperature (operation/storage)	0 ... +40 °C/-20 ... +70 °C

## Order information

Type	Description	Order no.
VMS200-6000	Volume Measurement System, including: 2 x LMS200S17 2 x Mounting bracket 2020925 1 x Control cabinet with integrated IPC IPC with embedded WIN NT, power supply, opto coupler, synchronisation unit, communication cables	1028408
VMS200-6010	Volume Measurement System, including: 2 x LMS200S17 2 x Mounting bracket 2020925 1 x Control cabinet with integrated IPC IPC with embedded WIN NT, power supply, opto coupler, synchronisation unit 1 x 12,1" TFT-Display with integrated keyboard Communication cables	1028192

## Accessories

Accessories can be found on Page 239