



FPS503

Free Flow Profiler

PROFILING SYSTEMS

SICK
Sensor Intelligence.



Ordering information

Type	part no.
FPS503	1088784

Included in delivery: Traffic Controller FPS (1), LMS511 SE (2)

Other models and accessories → www.sick.com/Free_Flow_Profiler



Detailed technical data

Features

Application	Measurement of vehicles and objects in motion Verification of compliance with vehicle dimension regulations Optimization of the loading process for ferries and car trains (RoLa) Basis for a size-based toll or payment system
Number of covered lanes	Up to 4 lanes at best performance Max. 9 sensors per system
Scanner design	3-scanner solution
Vehicle data	Vehicle dimensions (length, width, height) Vehicle classes Driving direction Lane assignment Confidence level for all vehicle datas 3D point cloud
Sensor	2D LiDAR sensor
Classification system	Europe, Asia, North America
Amount of vehicle classes	Up to 30 classes
Recommended distance between max. vehicle height and sensor	≥ 1 m
Recommended vehicle distance	0.6 m at v < 30 km/h 2.2 m at v < 120 km/h
Calibration	Automatic
Stop-and-go functionality	Yes
Scanning frequency	75 Hz, for LMS Width 35 Hz, for LMS Length
Max. range with 10 % reflectivity	40 m
Aperture angle	190°, per LMS511 SE
Laser class	1, eye-safe (IEC 60825-1:2014)
Heating	✓
Internal computer	Traffic Controller FPS ✓
Internal memory	32 GB
Application	Vehicle measurement, Toll systems, Verification of compliance with vehicle dimension regulations, Optimization of the loading process

Mechanics/electronics

Installation position	Overhead or at the side
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Installation height	5 m ... 8 m At least 1 m higher than the maximum vehicle height Angle between LMS and vehicle > 15°
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Performance

Counting accuracy	99.8 %
Classification accuracy	98 % (For TLS8+1 classes)
Length measurement accuracy	± 400 mm at v < 30 km/h (± 2σ) ¹⁾ ± 1,000 mm at v < 120 km/h (± 2σ) ¹⁾
Width measurement accuracy	± 50 mm at v < 30 km/h (± 2σ) ²⁾ ± 100 mm at v < 120 km/h (± 2σ) ²⁾
Height measurement accuracy	± 30 mm at v < 120 km/h (± 2σ) ³⁾
Minimum object size	1 m x 0.6 m x 0.6 m (L x W x H)
Maximum object size	32 m x 3.5 m x 5 m (L x W x H)
Minimum detectable object	190 mm x 130 mm x 130 mm < 30 km/h 525 mm x 130 mm x 130 mm < 120 km/h

¹⁾ Applies only if the LMS is mounted in such a way that vehicle tracking is possible.

²⁾ Applies only if the LMS is mounted in such a way that the vehicle can be examined from both sides.

³⁾ Applies only if the LMS is mounted in such a way that the vehicle roof is visible.

Interfaces

Output data	Vehicle data
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General notes

Items supplied	2D LiDAR sensor LMS511 SE (3 x) Traffic Controller FPS including software USB stick with TEMS info sample client, source code for TEMS info sample client, TEMS analyzer and operating instructions
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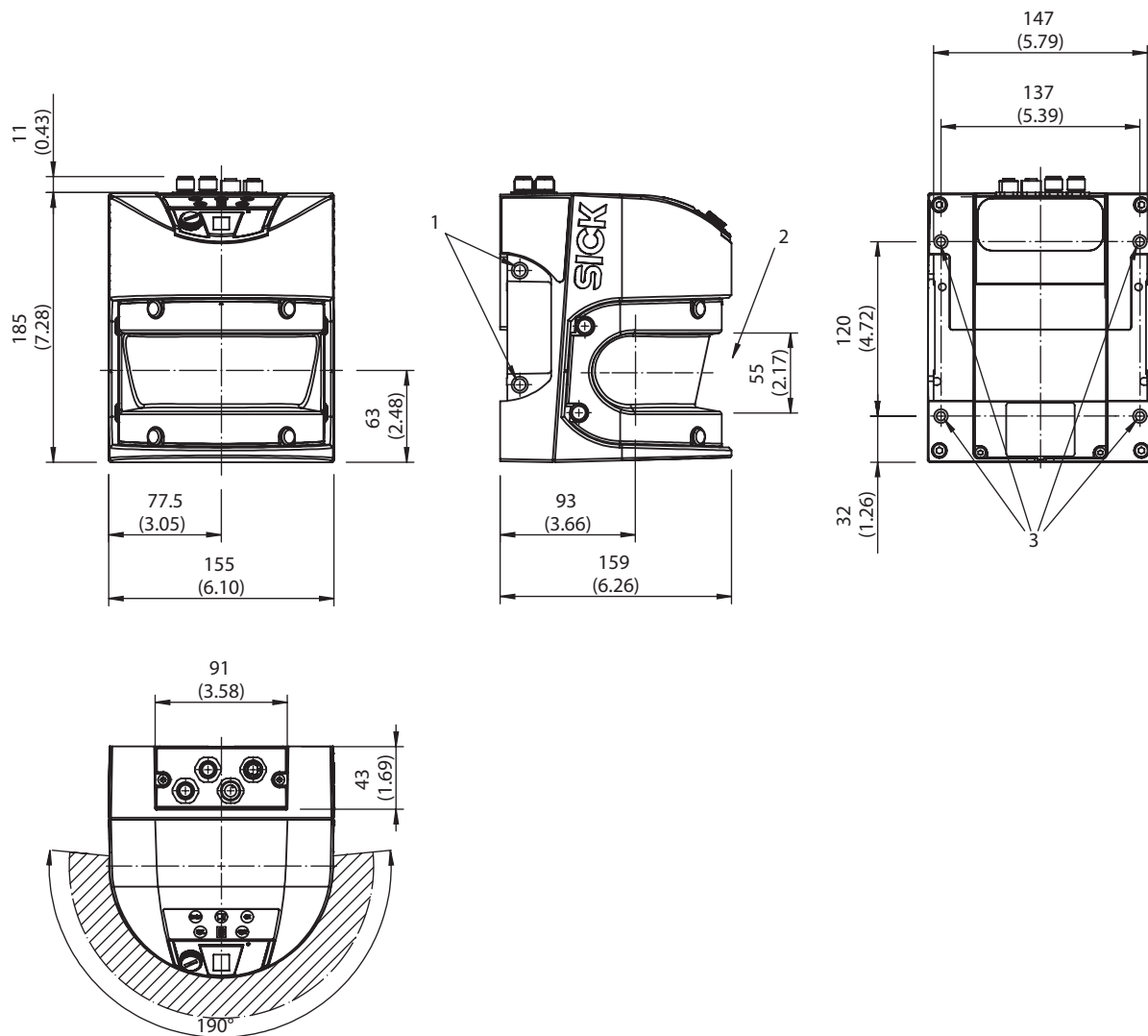
Certificates

EU declaration of conformity	✓
UK declaration of conformity	✓
China RoHS	✓

Classifications

ECLASS 5.0	27281001
ECLASS 5.1.4	27280190
ECLASS 6.0	27280190
ECLASS 6.2	27280190
ECLASS 7.0	27280190
ECLASS 8.0	27280190
ECLASS 8.1	27280190
ECLASS 9.0	27280190
ECLASS 10.0	27280190
ECLASS 11.0	27280190
ECLASS 12.0	27280190
UNSPSC 16.0901	41111615

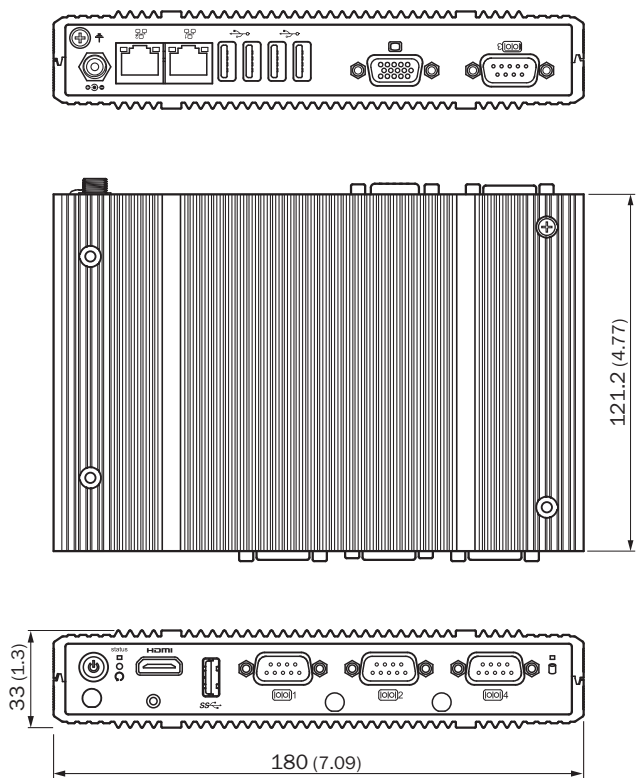
Dimensional drawing LMS511



Dimensions in mm (inch)

- ① 4 screw holes M8 x 9
- ② do not block front screen
- ③ 4 screw holes M6 x 8

Dimensional drawing Traffic Controller FPS



Dimensions in mm (inch)

Recommended accessories

Other models and accessories → www.sick.com/Free_Flow_Profiler

	Brief description	Type	part no.
Mounting systems			
	• Description: Mounting kit for wall-mounting (adjustment bracket) • Material: Steel • Details: Steel, zinc coated (1.0330)	Mounting kit	2018303
	• Description: Mounting bracket for LMS5xx (for retrofitting, if 2018303 is already in use) • Material: Stainless steel • Details: Stainless steel V2A (1.4301)	Mounting bracket	2059271
connectors and cables			
	• Connection type head A: Female connector, M12, 4-pin, straight • Connection type head B: Flying leads • Cable: 20 m, 4-wire, PUR, halogen-free • Description: Shielded • Application: Uncontaminated zones, Zones with oils and lubricants, Robot, Drag chain operation	YF2A64-200UE1XLEAX	6050687
	• Connection type head A: Male connector, M12, 4-pin, straight, D-coded • Connection type head B: Male connector, RJ45, 4-pin, straight • Signal type: Ethernet, PROFINET • Cable: 20 m, 4-wire, CAT5, CAT5e, PUR, halogen-free • Description: Ethernet, shielded, PROFINET • Application: Cold bending resistant, Outdoor, Zones with oils and lubricants, seawater resistant	YM2D34-200P-N4MRJA4	6050685

	Brief description	Type	part no.
Commissioning aids and test equipment			
	• Product: Alignment aids • Description: Alignment aid for detecting the infrared light (wavelength 780 nm to 1050 nm) of SICK sensors	Alignment aid	2101720

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

Contacts and other locations –www.sick.com