

## Services of the Traffic Laboratory

The METAS Traffic Laboratory carries out tests, verifications, calibrations, type examinations and conformity assessments of traffic measuring instruments of all sorts of technologies. This includes all significant techniques and modern technology for measurement equipment for speed measurements and traffic surveillance; among them:

- Radar Doppler CW
- Tracking Radar
- Lidar (manual and continuous mode)
- Laser scanner
- Section control
- Image based speed measurement systems
- Light barriers
- Speed measurement systems based on induction loops or piezo-electric sensors
- Tracking tachograph
- High-quality GNSS based instruments (GPS, Glonass, Galileo)
- Red light monitoring
- Automatic Number Plate Recognition (ANPR)
- Flash measurement
- Revolution speed (optical/mechanical)

## Interlinked worldwide

The development of measurement equipment for new technologies and of measuring stations for the realistic simulation of road traffic in the laboratory are METAS Traffic Laboratory's trademark. Correspondingly, it benefits from an excellent worldwide reputation and is recognized for its professional competence, the quality and accuracy of its measurements as well as its team members' comprehensive experience.

## METAS: The National Metrology Institute of Switzerland

The Federal Institute of Switzerland METAS is the National Metrology Institute of Switzerland. It represents the state of the art of measuring accuracy in Switzerland. Through its activities in research and development and its range of services, METAS is instrumental in ensuring that measurements can be performed in Switzerland at the level of accuracy demanded by industry, research, administration and society.

METAS realises the Swiss reference standards, ensures their international recognition and disseminates them with the requisite degree of accuracy in each case. METAS oversees the market launch process, use and control of measuring equipment in the retail trade, traffic, public safety, health and environmental protection. It makes sure that the measurements required for the protection of people and the environment can be carried out correctly and in the prescribed manner.

METAS keeps up with scientific and technological developments in order to maintain its place at the cutting edge. It is engaged in research and development with a view to improving measuring stations and metrological services. This applies to the measurement equipment and services of the Traffic Laboratory as well.



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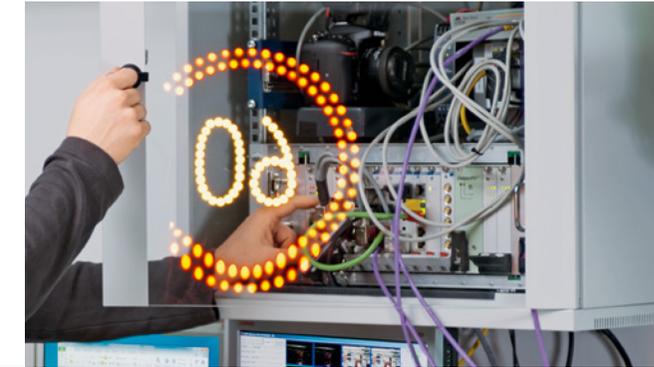


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Federal Institute of Metrology METAS

Swiss Confederation

## There is no speed limit for type approvals



METAS – your partner for type examinations of traffic measurement instruments

### Type Examinations, Type Approvals, Conformity Assessments

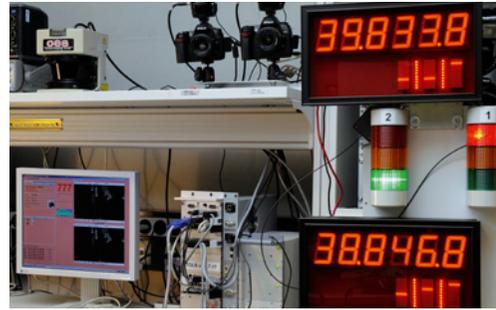
The METAS Traffic Laboratory ensures that the measurement equipments used in official traffic checks in Switzerland measure accurately and reliably. The experts of this laboratory also test new measurement instruments and measurement procedures. The laboratory possesses a specialised, high-tech measurement infrastructure for this purpose. To be able to fulfil its duties, its experts are frequently required to develop test methods for new measurement technologies.

One of the staff's main jobs is to perform type examinations. The Traffic Laboratory carries out its tests in accordance with the recommendations of the International Organisation of Legal Metrology (OIML-R 91) to the extent that these recommendations are applicable. However, for measurement equipment that uses innovative measurement techniques, international guidelines are lacking in many instances. In such cases, test methods have to be developed to ensure that the essential requirements are fulfilled.

A type examination is the basis for a type approval according to Swiss law. In many countries the type examinations of METAS are recognized as basis for a national type approval.

### Synthetic traffic in the laboratory

The Traffic Laboratory possesses reference test systems for the examination of speed measurement equipment operated on a motorway. Measurements in real road traffic are costly, expensive and dangerous. Furthermore high speed and acceleration values, which also must be taken into account for test methods, are not available at all in everyday traffic.



To insure examination of measurement equipment for road traffic in the laboratory as closely to reality as possible, the Traffic Laboratory has developed complex simulation systems allowing for realistic simulation of traffic in the laboratory. These in-house developed measurement equipment makes it possible to examine and validate reliably measurement instruments for traffic surveillance in the laboratory with synthetic traffic.

In these simulations, the entire speed range and the vehicle category may be selected freely. Synthetic traffic also allows for examination of the behaviour in speed changes and in complex traffic constellations. Furthermore, it offers the advantage of various devices or device types being tested under recurring, identical conditions, which is impossible in real road traffic.



### Testing image-based speed measurement instruments

More and more image-based speed measurement and access control devices are used. These devices are exclusively picture or frame-based (video camera, sequential camera). In order to allow for the approval and calibration of such devices in Switzerland, the Traffic Laboratory has developed a worldwide unique measurement equipment for the automatic examination and calibration of image-based speed measurement instruments. With these devices a vehicle's speed can be determined for instance on the basis of the movement of the number plate in space.

The Traffic Laboratory is able to test readers for automatic number-plate recognition using synthetically generated number-plates of different countries.



The Traffic Laboratory, already on the cutting edge of tests of Laser- and radar-based speed measurement devices, is thereby making available a service for these new device types

