



MUR-07 – SECTIONAL SPEED MEASURING SYSTEM

- Recognition of license plates
- Measuring of an arbitrarily long section
- High reliability and accuracy
- Automatic data processing
- Easy processing of violations

General Description

Stationary MUR-07 system has been designed for measuring of an average vehicle speed at the delimited road section. The measuring principle of the MUR-07 system is based on the laser detection of the passing vehicle through checking points located at the start and the end of the monitored section. Immediately after laser detection of a vehicle the video-system and recognition of licence plate is activated. An advantage of the system is a low demand for the computing operation, because the digital HD cameras are activated only if the vehicle is detected.

MUR-07 is capable to detect vehicles passing of up to 200 km/hour.

Measuring of sectional speed is particularly suitable for installing on high capacity roads going through residential areas of communities and cities (road of the first or the second category intersecting a community etc.) and otherwise dangerous road sections. An advantage over measuring by microwave radar speed detection in particular is a wider territorial coverage. The driver is forced to comply with the speed in the entire section, not only locally within the reach of the radar.

Part of the MUR-07 system function is processing of statistical data (traffic intensity, absolute and relative number of traffic violations, classification of vehicles by region and other).

For application on roads and highways the system of sectional speed measuring is approved by the Ministry of Transportation of the Czech Republic.

Basic Technical Description

The vehicle approaching the checkpoint is detected by the laser detector LD-07 which immediately activates the video camera installed on the relevant checkpoint while the exact time of the vehicle passage is recorded. For the precise identification of the vehicle licence plates in a bad weather and at night the checkpoints are also fitted with infra-red lights.

Scanned picture is analyzed and the data obtained are subsequently paired by the same license plate. Based on the time difference of passing the checkpoints and their distance, which is known, the vehicle average speed is calculated by a simple algorithm. The measured and calculated data is encrypted and together with pictures and other relevant information sent via GSM



technology to the dispatcher's workplace for further processing and also database archiving. Possibly, it can be transmitted with short response into the laptop of the police patrol to impose the traffic violation fine.

Part of the product is user friendly software that allows easy management of registered offenses or instant imposition of a fine to the driver.

Laser detector LD-07 is installed in protective housing on the mast or portal at a height of five to six meters and it is focused together with other elements of MUR-07 up to 20 to 30 meters.

As a measuring beam a semiconductor laser diode is used. The detector has an input power of 5 W and is powered by 24 V DC from a common source for the camera system of MUR-07. The laser detector works



in class 1 according to Government Regulation 480/2000 and complies with all hygiene standards of this class. In addition it complies with the environmental requirements and also requirement for EMC strength.

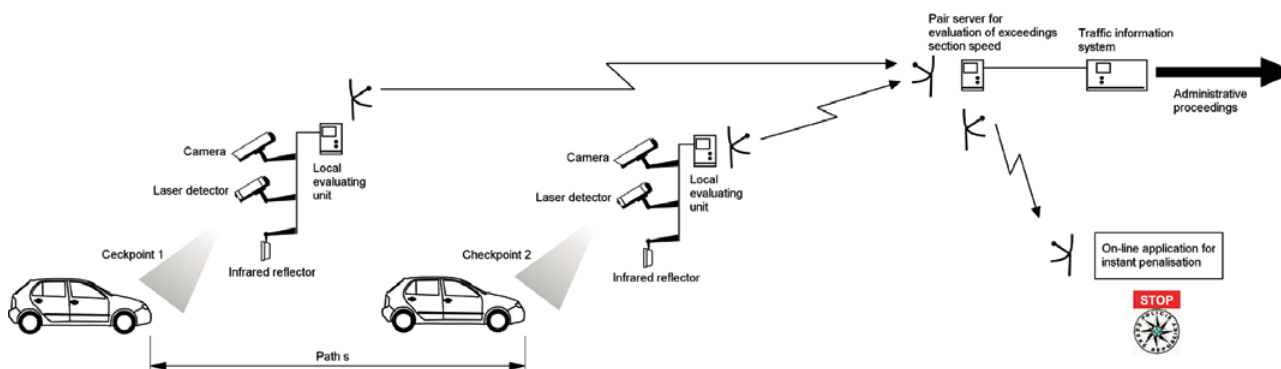
The infrared reflector is used to provide sufficient illumination

of the monitored area allowing to make a proper quality video recording in low or poor light conditions (darkness, fog, rain, snow, etc.). The reflector works with part of the light spectrum (850 nm), which is invisible to the human eye, it does not blind the driver, or cause any damage to his eyesight. The monitored area is illuminated only

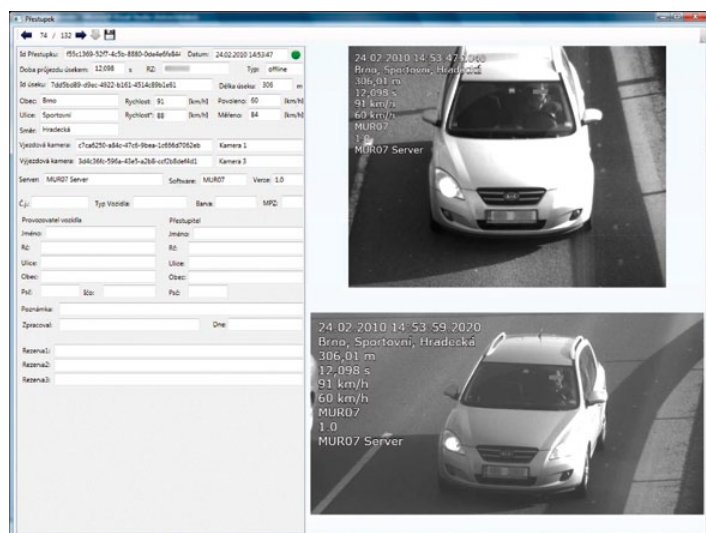
when the camera scans the vehicle. The exposure time of the flash is in the range of milliseconds. With his help, the film is clear, blur-free and usable for further processing. As a source of IR radiation is used IR LEDs for this purpose the best from the operational and economic point of view. IR LED lifetime is estimated at 100 000 hours.

Basic Technical Parameters

Cameras	HD digital camera (BW)
Industrial computer	industrial Embedded PC Advantech
Software	MUR-07
Minimum length of measured section	200 m
Maximum length of measured section	unlimited
Range of average speed measuring	from 10 to 200 km/hour
Maximum error of the speed up to the 100 km/hour	less than 3 km/hour
Maximum error of the speed over 100 km/hour	less than 3 %
Cover	IP 65
Working temperature range	-20 to +50 °C



Section speed measuring system diagram



System graphic interface