



Laser scanner + Radar



RSR4001

RSR4001 is a vehicle detector based on laser scanner and radar doppler technologies. The radar uses microwave technology and in particular the Doppler effect to measure the speed of vehicles with extreme precision. The laser scanner measures the profile of the vehicles allowing a precise classification of the transits. RSR4001 is able to distinguish more than 20 classes of vehicles including motorcycles, cars, vans, trucks, lorries, articulated lorries, buses. The use of two different technologies, enables the sensor to be very accurate and to measure all data about transit.

The sensor has been built both from the mechanical and firmware point of view to work outdoors even in adverse weather conditions. The firmware implements filters for rain and snow.

The scanner optics are made of two physically distinct areas for laser transmission and reception, making it particularly immune to the opacity produced by dust, water and pollution. The microwave technology with the "patch" antenna and an opening angle of 12° x 25° is very precise in the detection of speed.

The sensor is equipped with a CPU that processes the signals received from the scanner and the radar to obtain all the data related to the transited vehicle. Communication with the sensor takes place via an Ethernet line and the configuration can be performed using simple and intuitive web pages.



Technology 1	Laser scanner
Technology 2	Microwave radar
Emitted light	905 nm – not visible
Laser class	Class 1
Scan angle of laser	96°
Radar frequency	24.15 Ghz - K Band
Angle of radar	12° x 25°
Communication line	Ethernet
Power consumption	< 5W
Power supply	12 Vdc
Protection	IP65
Temperature range	-20°C : +60°C



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INSTALLATION

The RSR4001 sensor must be installed above the center of the lane. The opening angle of the laser beam and the radar signal are designed to cover the entire width of the lane to be able to detect even motorcycles that do not transit in the middle of the lane. The data provided by the sensor are:

- Counting
- Classification
- Speed
- Height
- Length
- Traffic status

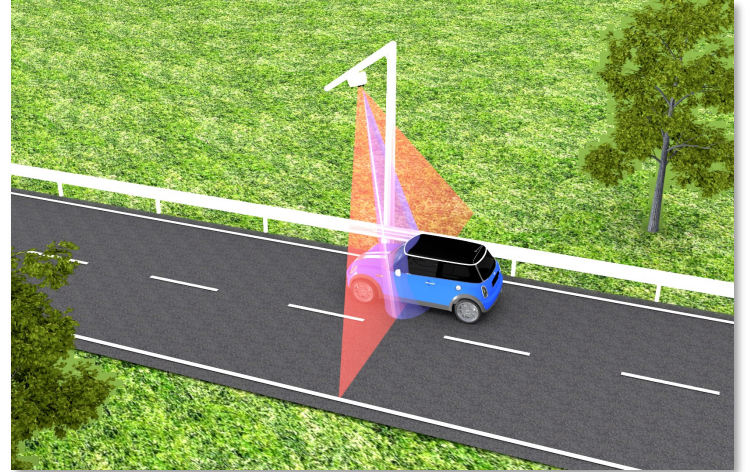


Figure 1: Transversal installation

APPLICATIONS

- Toll
- Traffic monitoring (ITS)
- Vehicle profiling
- Vehicle classification
- Trigger for cameras



VEHICLES PROFILING

In addition to the transit data, the RSR4001 sensor also provides a file in 3D format that allows to see the image of the transit from different perspectives.

