



Over Height Vehicle detection with high performances

- ◆ **Double technology**
- ◆ **Detection of small objects at high speed and on multiple lanes**
- ◆ **Vehicle counting and classification**

RAM110 has been developed to detect moving objects passing over the allowed height. RAM110 is also able to measure the distance of the object from the sensor and therefore to give information about the lane in which the object passed. This system is generally installed on roads close to a bridge, tunnel or other structure to safeguard.

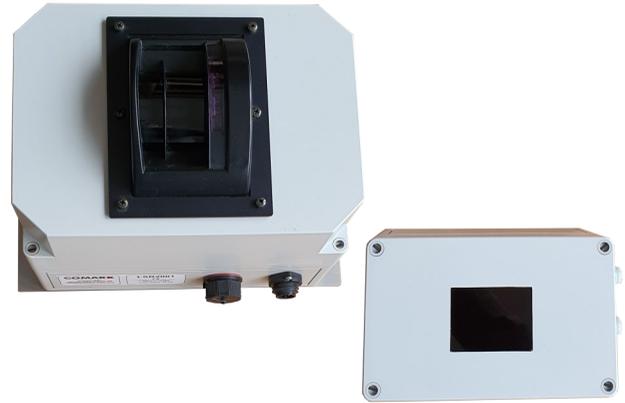
RAM110 is based on a laser scanner and a single beam laser. The laser scanner is very accurate in measuring the height and detect the presence of a vehicle. The single beam laser has a very high detection frequency and a narrow angle allowing to detect objects of small dimensions even at 20 m. A CPU works in real time combining the data of both sensors and thus providing very accurate data. The algorithms are designed to detect small objects over the allowed height but to trigger the alarm only when the presence of a vehicle is detected, reducing the false alarm rate.

The emitted light of the laser scanner and single laser (in the range of the infrared light, not visible) is modulated to be captured on the receiver filtering the ambient light noises.

In addition to detecting the maximum height the system is also able to inform on which lane the vehicle has passed.

Compared to the standard systems based on photocells with transmitter and receiver it has the advantage of easy installation because the laser and the control unit are placed on the same pole. Moreover it is not necessary to

RAM110 & RAM110T



Technology	Laser scanner
Class	Class 1
Opening angle	96°
Scan frequency	60 Hz
Detection range	25-35 m.
Technology	Single beam laser
Class	Class 1
Opening angle	0,5°
Detection frequency	500 - 2000 Hz
Detection range	50 m.
General	
Minimum width of object	50—100 mm.
Maximum speed of vehicle	150 km/h.
Data line	Ethernet
Alarm	Relay, D/O, software
Power supply	12 or 24 Vdc
Protection	IP65
Operating temperature	RAM110 :-20°C : +50°C
	RAM110-T: -40°C : +60°C

Detector



RAM20 & RAM20-T

collimate the transmitter and receiver but only to properly install the detector on the horizontal or vertical plane.

The control unit is composed by an outdoor cabinet which includes a power supply, a CPU and a communication unit.

ALARM

RAM110 provides alarms in different ways when an over height vehicle is detected: relay contact; digital output; software event (protocol)

The control unit is based on a CPU (with software and hardware watchdog) with the following features:

- Diagnostics of the laser scanner detector
- Computation of the size of the detected object
- Computation of the distance of the object from the sensor to determine the lane of transit
- Filtering of noises such rain, snow, birds, etc.
- Generation of alarms in case of detection of an over-height object with activation of a digital output, software alarm or relay.

INSTALLATION

The laser scanner must be installed with the planes in vertical position, above the height threshold and the single beam laser has to stay exactly at the threshold height.

RAM110, installed on the side of the road, can detect over-height vehicles on 4 lanes.

VARIABLE MESSAGE SIGN

It is also possible to combine the laser detection with a variable message sign (VMS) to inform the driver that he has to stop his vehicle or exit.

