

Noptel Distance Sensors for Traffic Control

Compact laser sensors for outdoor use

Accurate camera triggering, vehicle classification and speed measurement

Simple to adapt to a camera system, easy installation and maintenance

For system suppliers, OEM and end users

Lasers are rapidly becoming the tool of choice for a variety of tasks in the traffic control world. Not only are they simple to install and maintain, but they also open up new possibilities. Modern laser technology offers a very worthwhile alternative, not only technically but also at competitive prices.



AT THE FOREFRONT OF OPTICAL MEASUREMENT TECHNOLOGY

Noptel Distance Sensors for Traffic Control

Noptel's CM2 distance sensor family has been developed for OEM use in applications requiring high-speed measurements of distances from poorly reflecting targets. These devices represent a perfect choice for intelligent traffic camera triggering, vehicle classification or speed measurement. The units are small in size, light in weight and economical in power consumption, and are suitable for outdoor use in harsh environments.



Technology

The pulsed time-of-flight technology allows high-speed measurement of distances from poorly reflecting surfaces with excellent resolution. Thanks to the powerful processor they can be used for many different measurement tasks simply by programming their parameters according to the application.



The sensors are water-tight, nitrogen-filled to ensure reliable operation under varying temperature and environmental conditions. They have low power consumption and can be used in both fixed installation and portable systems. The high level of integration makes the sensor small and reliable. The CM-type sensor uses a narrow laser beam for measurement purposes, while the CMP type uses a wider laser beam.

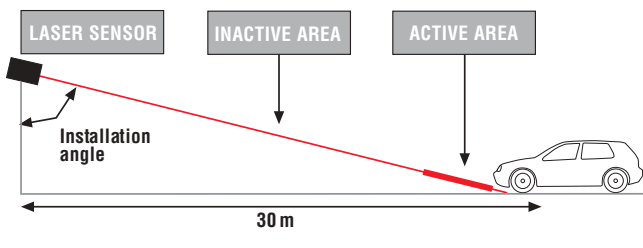
Operation

One typical application for a laser sensor is vehicle detection, when the vehicle is approaching an LPR camera or driving away from it. The principle of operation is to measure the distance from the object quickly and to use this to define the exact triggering moment. A typical sensor installation is five to seven metres above the ground, looking forward and down at the road. When the vehicle enters the trigger area defined by the parameters, the sensor sends a pulse to the camera. The triggering accuracy in such cases can be as high as 5–10 cm (or one millisecond), depending on the installation.

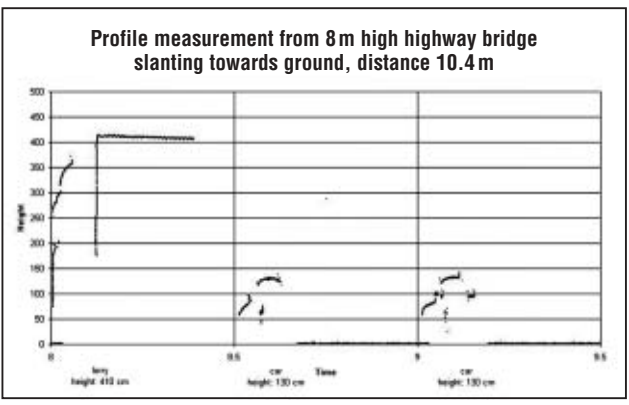
Similar installations can be used for measuring the speed of approaching or departing vehicles (10 to 250km/h). The speed information is available 20–30 milliseconds after the vehicle has passed the measurement point. Speeding trigger information for the camera can be arranged in two phases: first a rough speed value for the trigger in a few milliseconds, followed by processing of the data, giving a final figure for the speed. This allows reliable measurement even if vehicles are driving close to each other.

Safety

The international standard for laser safety splits the products into several classes, starting with class 1. The required level of safety in traffic control is class 1, where the measurement is "eye safe". All Noptel sensors fulfil these requirements.



Feedback from the users of lasers around the world has been good. Projects and installations with laser sensors are multiplying. Many control system manufacturers and system integrators have seen the benefits of lasers and have adopted this technology for the main sensor in their systems. Their ease of installation, multifunctionality, adaptivity and maintainability make laser sensors very attractive for both system suppliers and end users.



Applications

- LPR camera triggering
- Vehicle profile measurement
- Vehicle classification
- Speed measurement
- Speed violation control
- Portable speed cameras
- Traffic light control
- Intersection control
- Left turn sensor
- Signal violation control
- Criminal vehicle interception
- Vehicle detection
- Tunnel entrance control

Benefits

- Compact and light-weight
- Easy to install
- Multifunctional
- Easy to adapt to a camera system
- Simple to maintain

More information at www.noptel.fi