POLISCAN
FOR SAFER ROADS
In 2006, the field of traffic enforcement technology witnessed a revolution with the introduction of VITRONIC LIDAR systems (Light Detection and Ranging). Suddenly, it was possible to clearly and accurately detect multiple vehicles across several lanes in both directions at the same time even in dense traffic and with just one system – fully automatically, without sensors in the road surface.

Today, the POLISCAN systems in their striking pillars have become an integral part of traffic enforcement processes worldwide and have largely replaced the conventional, technically limited measurement technologies such as radar.

Around the world, several thousand VITRONIC laser scanners with their high-precision and reliable measurement technology and high degree of flexibility ensure improved traffic safety and more efficient traffic monitoring.

More information on POLISCAN can be found at www.vitronic.com/poliscan
The LIDAR Technology

» Monitors speed, red light, lane-related and tailgating violations
» Measures all vehicles on several lanes
» Accurately assigns offenses to vehicles even in heavy traffic
» Works fully automatically
» Distinguishes between different vehicle classes
» Records significantly more infringements than radar
POLISCAN

MORE LANES
MORE OBJECTS
MORE PROTECTION

POLISCAN systems work with powerful LIDAR technology. The measurement is based on the transmission of a “fan” of laser beams. Over 15,000 light pulses per second detect all vehicles, track their position and generate an exact spatial picture of the traffic situation in real time. The high repetition rate of the laser pulse ensures a highly accurate calculation of the speed of all vehicles. Furthermore, the vehicle classes are also identified.

Compared to conventional technologies, LIDAR offers considerable advantages in traffic monitoring. Laser scanners are not affected by disruptive reflections and therefore also ensure safety at dangerous locations such as construction sites or tunnels where radar systems do not work. The continuous vehicle tracking also makes it possible to variably record evidence images at the optimum photo trigger point. This results in higher image quality, especially in case of multi-lane roads, as well as more validated cases – without occlusion by other vehicles.

ONE SYSTEM
MANY ADVANTAGES

**Precision**
State-of-the-art LIDAR measuring technology.

**Cost Efficiency**
Simple installation, maintenance and verification without road surface works.

**Fair and Accurate Measurements**
Precise, continuous recording of all traffic infringements, even in dense traffic.

**Flexibility**
Simultaneous enforcement of multiple violation types.

**Security**
Tamper-proof digital incident documentation.

**Design**
Timeless modern design fitting into any landscape.
NEXT GENERATION SPEED ENFORCEMENT

Task
Speeding is the most common cause of fatal traffic accidents. Speed enforcement which reliably records speeding motorists under all conditions is therefore important.

Solution
POLISCAN SPEED detects every vehicle fully automatically and enables comprehensive speed enforcement – lane specific and depending on the vehicle class. Even in the case of lane changes, tailgating and difficult measurement situations, the measuring system works reliably and accurately. POLISCAN SPEED can be used as a fixed system, a semi-stationary system in the ENFORCEMENT TRAILER and as a mobile device (tripod, in-vehicle).

» One system for fixed and mobile speed enforcement
» Performs measurements within construction sites, bends and tunnels
» Comprehensive detection from roadside or median
» Variable speed limits according to lane and vehicle class
AVERAGE SPEED ENFORCEMENT FOR A SAFER TRAFFIC FLOW

Task
Long stretches of road or tunnels are often an invitation to speed over the entire distance. To increase traffic safety on entire road sections, speeds have to be monitored not only at one particular point, but along the danger zone.

Solution
Full speed enforcement along road sections is possible with average speed enforcement. With POLISCAN SECO the average speed driven between two or more measurement points (point-to-point) is determined by using automatic number plate recognition to record vehicles when they enter and exit the section of road. If the average speed exceeds the permitted value, the system documents the violation.

» Continuous speed enforcement on long or dangerous road sections
» Improved traffic flow
» Supports traffic management when combined with variable message signs
» Can be combined with other ANPR applications
**Task**
Intersections are black spots and their monitoring is important. Conventional red light enforcement, however, requires induction loops or piezoelectric sensors in the area of the stop lines. Their installation and maintenance is costly, results in traffic congestion and they have a limited service life.

**Solution**
POLISCAN REDLIGHT is able to monitor multiple lanes and multiple vehicles. Through continuous LIDAR position determination, the system detects and documents all red light violations on intersections. POLISCAN RED+SPEED additionally documents speed violations during all traffic light phases. Optional remote cameras record images or videos showing vehicles and traffic lights at the violation time.

» No in-road sensors required
» Simultaneous monitoring of red light and speed violations
» Monitoring of one or two driving directions
» Secondary video evidence
Task
Restricted traffic lanes are frequently misused. For example, unauthorized driving on emergency and bus lanes puts other road users at risk and is a cause of serious accidents and congestion.

Solution
POLISCAN monitors all or individual lanes selectively according to vehicle classes and time of day. This function can also be combined with speed and red light enforcement. Infringements of lanes which are closed or only authorized for restricted use can be recorded and documented this way.
TAILGATING ENFORCEMENT

Task
Tailgating is a common cause of serious accidents and represents a major hazard on highways. Enforcing tailgating offenses can contribute to increased traffic safety, however traditional manual enforcement methods are inefficient and costly.

Solution
LIDAR positioning enables POLISCAN to determine the headway between vehicles and the speed driven without any additional lane markings. Moreover, it is possible to monitor both driving directions. If a vehicle does not maintain the prescribed safety distance, the system documents the traffic scene in image and video.
MAXIMUM APPLICATION FLEXIBILITY

Fixed Enforcement: CITY DESIGN HOUSING 1
The CITY DESIGN HOUSING 1 consists of rotatable segments and accommodates up to two POLISCAN systems and two flashes. This allows flexible bidirectional enforcement from the center median or shoulder with front or rear documentation of offenses.

» Monitoring of one or two driving directions
» Enforcement from the median or shoulder
» Freely rotatable segments, covering all possible intersection angles

Fixed Enforcement: CITY DESIGN HOUSING 2
The CITY DESIGN HOUSING 2 has a passive cooling system. It is ideal for sites requiring enforcement of one direction. Bidirectional enforcement is also possible if documentation of offenses is permitted from both the front and rear of the vehicle.

» Reduced power consumption
» Preassembled for quick installation and easy ongoing maintenance
» Extendable with a Crown Upgrade unit for additional enforcement functionalities

Fixed Enforcement: ROADSIDE HOUSING
The ROADSIDE HOUSING has a sturdy design permitting fixed enforcement in adverse environmental conditions or at secluded sites.

» Increased vandalism protection
» Bulletproof steel housing
Mobile Enforcement: Tripod
Easy to set-up mobile deployment on a tripod allows for unobtrusive speed enforcement.

» Fully automated, unattended use without manual site calibration
» Up to ten hours of mobile enforcement with a single lithium battery box
» Extendable with a remote camera or documentation unit for bidirectional enforcement or secondary video evidence

Mobile Enforcement: In-Car
For even faster mobile deployment POLISCAN can be installed in a vehicle, providing extra protection and comfort for the operator.

» Can be installed in both front or rear of a vehicle
» Automated enforcement, allows the operator to concurrently work on case files
» Extendable for bidirectional enforcement or secondary video evidence

Autonomous Enforcement: Trailer
The ENFORCEMENT TRAILER enables long-term or permanent automated speed enforcement at accident hotspots that lack the infrastructure required for a fixed speed camera.

» Minimum five days of 24-hour operation
» Built-in modem for wireless data transmission case and remote access
» Protected against vandalism with bullet-proof exterior and alarm system
AUTOMATED ENFORCEMENT, MADE EASY

POLISCAN features a unique approach to usability which guides the user through system set-up and reduces the time required to start an enforcement session. The rear of the measuring unit has an integrated color touch display which allows easy and intuitive access to system information.

This includes live data on the current enforcement session, recent cases and the system status. If the calibration interval is close to expiry an appropriate warning message is displayed during start-up.
This unique design approach permits simple operation of POLISCAN and is achieved through attention to both detail and usability of the physical device and the system control software. The measuring unit is light, robust and contains all sensors and components for reliable measurement, documentation and cryptographically secured evidence. A single interface connector allows the system to be easily moved among sites or vehicles and between fixed and mobile enforcement scenarios.

The control software guides the operator in adjustment and alignment with a real time, lane based, graphical representation of the passing traffic. During adjustment, the system simultaneously analyzes and adapts to the traffic flow.

Once the set-up has been concluded, POLISCAN no longer requires an operator, running automatically for both fixed and mobile enforcement.
WELL ADVISED:
WITH THE KNOW-HOW
OF VITRONIC

Support
VITRONIC offers extensive customer support. This covers everything from site selection and inspection, through installation and commissioning of the systems, to financing options. Here, we invest the same passion in our standard applications as we do in our tailor-made solutions.

Training
Certainty through training – VITRONIC offers comprehensive training courses for users of POLISCAN systems. Topics covered include operating concept, installation and operation of the systems, violation documentation and data flow management.

Service
POLISCAN systems use leading-edge technology. In order to ensure that this level of efficiency is maintained over many years, VITRONIC offers a range of tailor-made services. From system and on-site verification, through maintenance, repair and rental options, to software maintenance – VITRONIC’s service portfolio has the right option for each and every requirement.
VITRONIC WORLDWIDE

VITRONIC is a global leader in the field of industrial machine vision headquartered in Wiesbaden, Germany. Since its foundation in 1984, the privately owned company has been offering highly innovative solutions in industrial automation, logistics automation and traffic technology. Today, VITRONIC supports customers in over 60 countries via a global network of subsidiaries, service centers and partner companies.

All of the companies’ products are developed, designed and manufactured by VITRONIC in Germany. They range from standardized to fully customized solutions.

Feel free to contact us – we look forward to hearing about your projects.

Full contact details and further information are available at www.vitronic.com