



Our focus is innovating security
where you need it most

Smoother traffic flow - Better image quality - Higher efficiency



BOSCH

Invented for life

Efficient use of your road network through intelligent camera-based systems

When it's your responsibility to make sure traffic flows smoothly on highways and other roads under your control, there are many options available. From the most basic - e.g. changing or adding signage - to physically upgrading or even expanding the road.

What's always of vital importance is that your road infrastructure is used as efficiently as possible. The intelligent cameras from Bosch allow you to adequately respond to disruptions, under all lighting and environmental conditions, for a relatively modest investment.

High-quality images at all times

You get relevant information under an exceptionally wide range of conditions, for example:

- ▶ After dark
- ▶ When it's raining or snowing
- ▶ In very low levels of ambient light
- ▶ As the sun is setting or shining directly into the camera
- ▶ When the oncoming traffic seems to be one huge, moving blur of dazzling headlights
- ▶ When street lighting distorts the colors of vehicles.

In these and many other challenging situations, you still need to be able to generate high-quality images that give you the information you need to take any necessary corrective action in situations like:

- ▶ Rush-hour
- ▶ Accidents
- ▶ Objects on the road (vehicle parts like bumpers or burst tires, fallen trees, animals)
- ▶ Cars driving the wrong way
- ▶ People walking too close to the traffic on motorways
- ▶ Broken-down vehicles on the hard shoulder

Video surveillance that's always relevant

At Bosch Security Systems, we believe that everyone deserves to live in a safe and secure environment. Through our dedication to superior quality and technical innovation we push ourselves to develop new products and solutions that put us at the forefront of our industry.

Always giving you the image quality and information you require

Our intelligent cameras distinguish themselves through their ability to generate the information you need, regardless of the weather or time of day. This is done by combining a number of smart technologies together in a single unit, giving you the reassurance of always having the image quality and information you require to effectively manage the traffic flow.

Dealing with headlight dazzle

By using saturation control techniques that take peak illumination levels into consideration, headlight dazzle is greatly reduced. This means you can pick out details more easily.

Accurate motion reproduction at night

The selectable 'motion mode' is ideal when traffic is moving at high speed after dark. This could mean the difference between correctly or incorrectly reading a number plate or identifying lettering on the side of a truck.

Reducing the impact of sun glare

It can be quite a challenge to deal with the sun blazing directly into the lens. Bosch cameras have a Wide Dynamic Range (WDR), allowing them to capture multiple images at different exposures and combine them into composite picture that average out the extremes in light levels. In this way, you can still retrieve the information you require.



Superior color reproduction

Street lighting often distorts the way colors are perceived. Bosch cameras incorporate an Automatic White Balance (AWB) feature, which compensates for this distortion when activated using the 'outdoor mode'. What you see in the generated images is therefore a much more accurate representation of reality. This helps you, for example, determine vehicle color.

“Crystal clear images in any weather conditions”

Clear images even with very little light

The starlight technology offers best in class light sensitivity, excellent wide dynamic range and front and backlight compensation. The result: you get black-and-white images where previously no images were possible, or color images in situations where other cameras would only produce black-and-white images.

Automatic detection of potentially dangerous situations

We fully appreciate how difficult it can be to constantly keep an eye on multiple traffic scenes shown on displays in control rooms. After only 20 minutes you can miss 90% of the activity on a screen. Bosch cameras therefore make use of Intelligent Video Analysis (IVA) to automatically alert for potentially

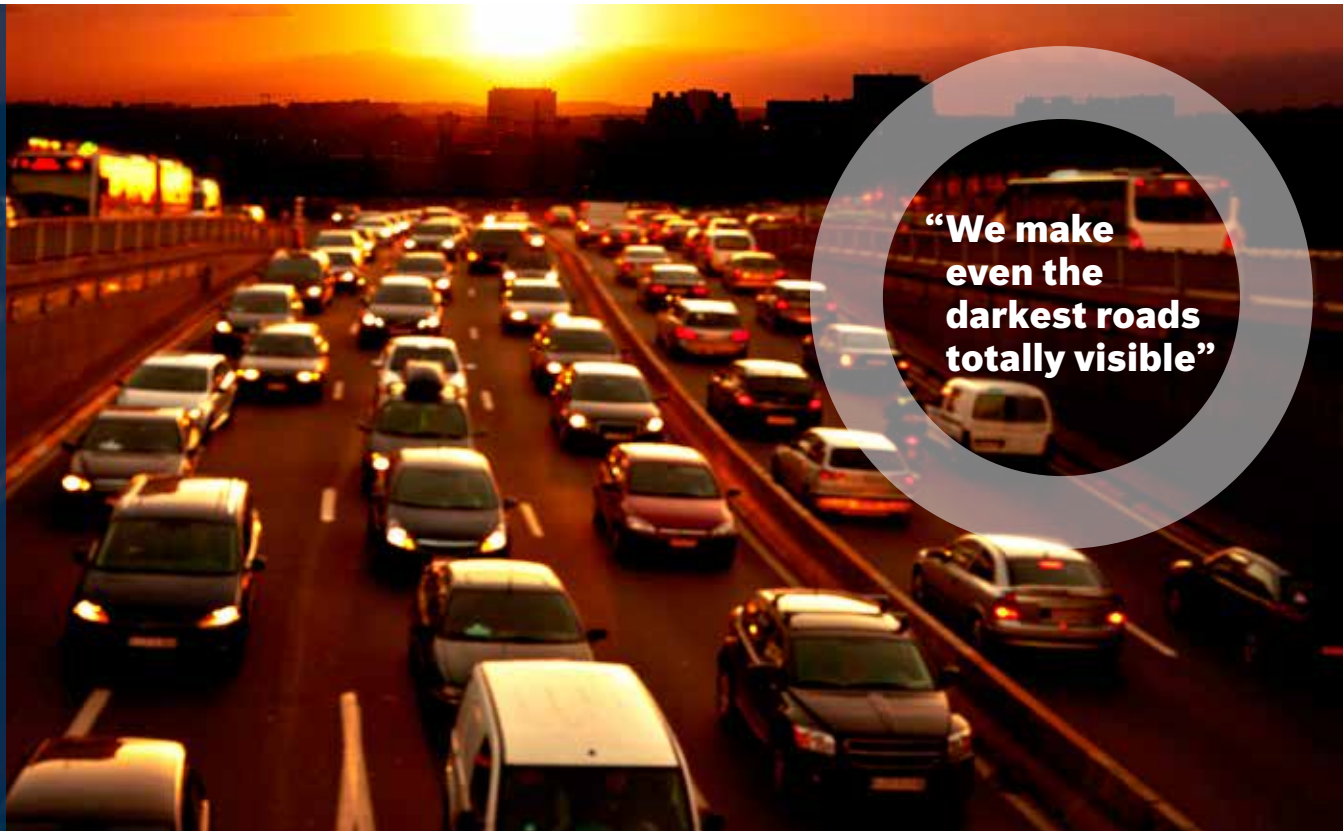
dangerous developments, such as people or vehicles on the hard shoulder. An alert is then generated to catch the attention of the operator.

Helping law enforcement

For enforcement purposes you need cameras that deliver clearly legible license plates under all lighting and environmental conditions. Our ANPR (automatic number plate recognition) cameras are specially tuned to provide the required information.

Cutting through fog and smog

Whenever bad weather conditions like fog, smog, dust or rain reduce the clarity of the images captured, Intelligent Defog will adjust the black level and increase the contrast to bring out the hidden details.



Products

For traffic monitoring applications on highways and other roads Bosch offers a range of cameras meeting a wide variety of surveillance requirements.

Yet we offer much more. In fact our solutions help you capture, record, retrieve and view the images you need. And conform to all the relevant industry standards. Part of the camera portfolio has NEMA TS-2 and NTCIP certification.

The following cameras are ideal for traffic monitoring applications on highways and other roads:

- ▶ MIC IP starlight 7000 HD
- ▶ DINION IP starlight 7000 HD
- ▶ FLEXIDOME IP starlight 7000 RD
- ▶ FLEXIDOME IP starlight 7000 VR
- ▶ AUTODOME IP starlight 7000 HD
- ▶ DINION IP 5000 HD/MPD

License plate recognition cameras:

- ▶ DINION IP capture 5000
- ▶ DINION capture 5000
- ▶ DINION AN traffic 4000 IR

Through a technology known as Intelligent Dynamic Noise Reduction (IDNR) the IP cameras make smart use of the available bandwidth and reduces bitrate by up to 50%.

Integration

Naturally our systems are designed to interface with your existing information infrastructure. What's more, through our Integration Partner Program we work closely together with other traffic solutions providers to make sure that installation, operation and maintenance all take place as smoothly as possible. The MIC IP cameras have been certified for use with the FLIR-Trafficon Automatic Incident Detection system.

For additional information please refer to our website www.boschsecurity.com.

To find out how our intelligent camera-based systems can have a significant impact on other parts of the road network, please see our application note for Tunnels.



MIC IP starlight 7000 HD



DINION IP starlight 7000 HD



FLEXIDOME IP starlight 7000 RD



DINION IP capture 5000
DINION capture 5000



FLEXIDOME IP starlight 7000 VR



AUTODOME IP starlight 7000 HD



DINION IP 5000 HD/MPD



DINION AN traffic 4000 IR

A tradition of quality and innovation

For over 125 years, the Bosch name has stood for quality and reliability. Bosch is the global supplier of choice for innovative technology, backed by the highest standards for service and support.

Bosch Security Systems proudly offers a wide range of security, safety, communications and sound solutions that are relied upon every day in applications around the world, from government facilities and public venues to businesses, schools and homes.

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To learn more about Video Systems please visit www.boschsecurity.com/hdsecurity

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Application Note Traffic Highways

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