

# The power and potential of ANPR in vehicle access control



# Introducing ANPR

In recent years, the importance of securing access to premises has grown exponentially, driven by an ever-increasing need for safety and the rising complexity of security threats. In this dynamic landscape, various methods of vehicle identification have emerged as contenders for a role in access control. Think semi-active RFID and passive RFID, as well as automatic number plate recognition (ANPR). Each of these technologies has distinct characteristics that make them suitable for different situations.

In this white paper, we focus on ANPR as a popular choice for (vehicle) access control solutions, and guide you through the following topics:

- What is automatic number plate recognition?
- Why and when to opt for ANPR as a solution.
- Exploring the spectrum of ANPR solutions.
- An in-depth comparison of ANPR cameras and generic security cameras.

We begin by demystifying ANPR and its applications, looking at the scenarios where ANPR shines as a solution and the various ANPR alternatives. Then we give a detailed comparison that empowers you to make informed decisions about vehicle access control.

# What is automatic number plate recognition?

ANPR identifies a vehicle by using optical character recognition to read its number plate. This modern approach streamlines vehicle access control by reducing reliance on human intervention and eliminating the need for [RFID](#) tags in situations where they may not be practical .

Originally, [ANPR](#) was mainly used by law enforcement to automate vehicle identification for purposes like finding stolen vehicles and monitoring traffic violations. This innovation revolutionized how police managed traffic-related data.

However, ANPR's versatility extends beyond law enforcement. It's now widely adopted in various security applications, including gated communities, campuses, shared office spaces, sports complexes and hotels. ANPR simplifies the process of granting temporary or occasional vehicle access for employees and visitors. It's a cost-effective solution that eliminates the need for expensive tags for visitors and ensures employees don't have to worry about always carrying a tag with them.

In the following sections of this white paper, we'll explore when and why ANPR is the right access control solution, examine various ANPR alternatives, and conduct a comprehensive comparison to guide your access control decisions.

# Why and when to opt for ANPR as an access control solution

Automatic number plate recognition (ANPR) offers several advantages over RFID, making it a valuable choice for a variety of situations. Below are key characteristics and scenarios where ANPR excels:

## Key ANPR characteristics

- **One-time investment:** ANPR cameras are a cost-effective, one-time investment. In the long run, they save money as – unlike RFID systems – there are no ongoing expenses for tags.
- **Copes with high visitor volumes:** ANPR simplifies access for authorized vehicles, especially where there are high volumes of visitors, which is an advantage in many situations. The downside, is ANPR can make it easier for unauthorized vehicles to enter with false number plates.
- **Performs best in a stable environment:** ANPR cameras can be affected by conditions such as dust, sand, hail and inclement weather. They may also struggle to recognize plates that are dirty, damaged or obscured by other objects.
- **Identifies at a distance:** ANPR cameras incorporate optical character recognition and infrared functionality, enabling them to read number plates at a range of up to 10 meters.

*Improved with ANPR*

## **Ease of installation for employees and visitors at Prologis in Mexico City**

Prologis has the largest platform and is the leading provider of industrial warehouses and distribution centers in Mexico. Prologis was seeking a way to update employee access control in some of their industrial parks near Mexico City. With the successful implementation of Nedap's ANPR Lumo license plate reader, vehicles are now identified from a long range with ease and without friction for both employees and visitors. [\[read more\]](#)



# Why and when to opt for ANPR as an access control solution

## Situations where ANPR is a great choice

- **Unknown users:** If your environment attracts a variety of unannounced visitors and unknown vehicles, ANPR is a suitable choice for identifying vehicles and managing access efficiently.
- **Issuing tags is undesirable:** If you're not equipped to issue unique tags, or tags are seen as too costly or invasive from a privacy perspective, ANPR is a more practical solution.
- **High volumes of traffic:** For environments with high levels of traffic flow, ANPR systems excel – especially during peak times. And they're preferable when issuing tags is time-consuming and expensive.
- **Medium security level:** In situations where the highest level of security isn't essential, ANPR is a cost-effective choice. A missed number plate entry may not necessarily breach security policy, leading to cost and labor savings compared to RFID systems with tags.
- **A hybrid approach:** In highly secure environments, you can adopt a hybrid approach, using a combination of both ANPR and RFID to ensure one system is always available if the other fails.

When considering ANPR for access control, it's essential you consider the specific needs and characteristics of your environment. So you can make an informed decision that aligns with your security goals and operational requirements.

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### **Long-range vehicle access for vehicles that need to be granted access temporarily or incidentally**

The Slovenian company Iskra Mehanizmi delivers solutions in the fields of mechatronics, fine mechanics, electromechanics and electronics to customers worldwide. This company values the security and user experience of employees and visitors. For vehicles that need to be granted access temporarily (employees) or incidentally (visitors), Nedap's ANPR Lumo camera was selected as the perfect solution. [[read more](#)]



# An in-depth ANPR comparison

A variety of video solutions are available for long-range vehicle identification. But how do you decide which solution best fits your needs? For reading number plates, it's important to know the difference between automatic number plate recognition cameras and generic security cameras with an ANPR function.

Below, we've listed the differences between an ANPR camera and a generic security camera with server-based ANPR.

Technology	
ANPR camera	Generic security camera
ANPR cameras are designed to capture license plates with a high level of reliability. Also, it's easy to integrate them with an access control system and comply with privacy legislation when sending data.	By default, a generic security camera detects and records movements near objects and on infrastructure. But they can also record video images of vehicles in real time to read license plates. These cameras are a lower specification, however, when it comes to integration and adhering to privacy rules.
Cost	
ANPR camera	Generic security
Even though the initial cost is usually higher for an ANPR camera, the cost of ownership is typically lower because most suppliers don't charge recurring software license fees and there's no need to set up a software server.	Although the cost per camera per entry is lower, the total cost of ownership can end up being higher due to hardware components and the need for servers and ongoing software licensing costs.
Accuracy	
ANPR camera	Generic security
ANPR cameras are specialized in capturing number plates in different traffic situations, such as at night or at high speed or if there's reflection or fog. The accuracy of an ANPR camera is usually 95% or higher.	CCTV cameras aren't specifically designed for ANPR use. Which leads to lower accuracy in conditions such as bad weather, direct sunlight or poor IR reflection, or when cars are travelling at high speed.

# An in-depth ANPR comparison

Connectivity	
ANPR camera	Generic security camera
An all-in-one license plate camera, with integrated ANPR software, reduces the need to rely on a constant server connection and therefore increases reliability.	The camera only records images and needs a connection to a server for processing. The quality of the performance depends on the available bandwidth and the quality of the connection.
Processing capacity	
ANPR camera	Generic security
Processing of the video takes place locally – only alphanumeric data needs to be sent to a central location. This reduces the network footprint and improves accuracy.	Due to the constant flow of images, more data must be processed. This means a longer processing time and lower accuracy.

To conclude, ANPR cameras are specialized in capturing license plates with high reliability, even in challenging conditions. They offer a cost-effective ownership model without recurring software fees. On the other hand, generic security cameras provide broader functionality but may lack the same level of accuracy, especially in adverse conditions. They typically require more processing resources due to continuous image capture. Your choice depends on your specific needs and priorities.

# Get expert advice

We hope this white paper has given valuable insights into ANPR and its practical applications in access control. And that our technology comparison has shed light on the various video options for vehicle identification.

With years of expertise and extensive experience in this field, we're here to help you. If you'd like to explore ANPR further, or have any queries about our camera solutions, please check out this detailed ANPR technology page. Or feel free to reach out to us – we're here to help you on your journey.

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