

Analog Cameras vs IP Cameras

If you are looking to install a security surveillance system in your home or business, one of the decisions you have to make is whether to go with an IP or analog camera. Deciding on IP versus analog cameras is not necessarily a simple decision as there are advantages and disadvantages to each style of camera. We will explore some of these differences more in-depth so you can determine which option is right for you.

The main difference between the two camera types is the way in which the video signal is delivered. Analog cameras turn the video signal into a format that can be received by a television or other receiver such as a VCR or monitor. An IP-based camera, also known as an IP network camera, digitizes the video signal using a specialized encoder that contains an onboard web server. This allows the IP camera to act as a network device, thus allowing captured video images to be viewed not only through an existing network but also through a web browser that can be accessed through the Internet.

Both analog and IP-based video cameras can transmit signals either wirelessly or through wired connections such as Cat-5 cables. IP-based cameras have the added benefit of being able to use switches, hubs, and routers that allow the Cat-5 network to be expanded to much broader ranges. In order to determine which style camera system is best suited to your needs, let us take a closer look at some of the pros and cons of each style.

Pros of analog cameras

- Lower cost -- Analog cameras generally cost less to purchase than IP cameras.
- Greater flexibility of design -- Analog cameras often come in a larger variety of designs such as mini covert cameras to large PTZ models. If you have unique surveillance needs you may find it easier to find the style of camera you need in an analog model.
- Superior compatibility -- It is much easier to mix and match cameras and brands if you use analog versions. This can make it easier if you already have existing camera equipment that you wish to incorporate into your surveillance system.

Cons of analog cameras

- Lack certain features -- Many of the basic analog cameras often lack some of the more advanced features such as digital zoom.

- Potential interference problems -- If you are installing a wireless surveillance system, analog systems can have interference problems. More importantly, the resulting signals cannot be encrypted. This can potentially mean that someone else can view the signal.
- Long distance applications are more difficult -- If your surveillance needs encompass a wide area, analog cameras may not be your best choice. Analog cameras generally do not accommodate big distances, and getting them to work over broad ranges can be difficult.

Pros of IP cameras

- Better wireless reception -- IP cameras have encryption built right into them providing for a more secure network. Interference is also not a problem with IP-based models.
- Can utilize existing wiring -- Because IP-based cameras act as their own network device, you can often take advantage of existing network wiring within your home. This can make the installation task much easier.
- Remote access can be easier -- IP cameras are better suited for remote surveillance needs.

Cons of IP cameras

- Higher cost -- Because of the additional technology that is built into each camera, the cost is generally higher than analog versions.
- Higher bandwidth required -- IP cameras require more bandwidth than analog cameras.

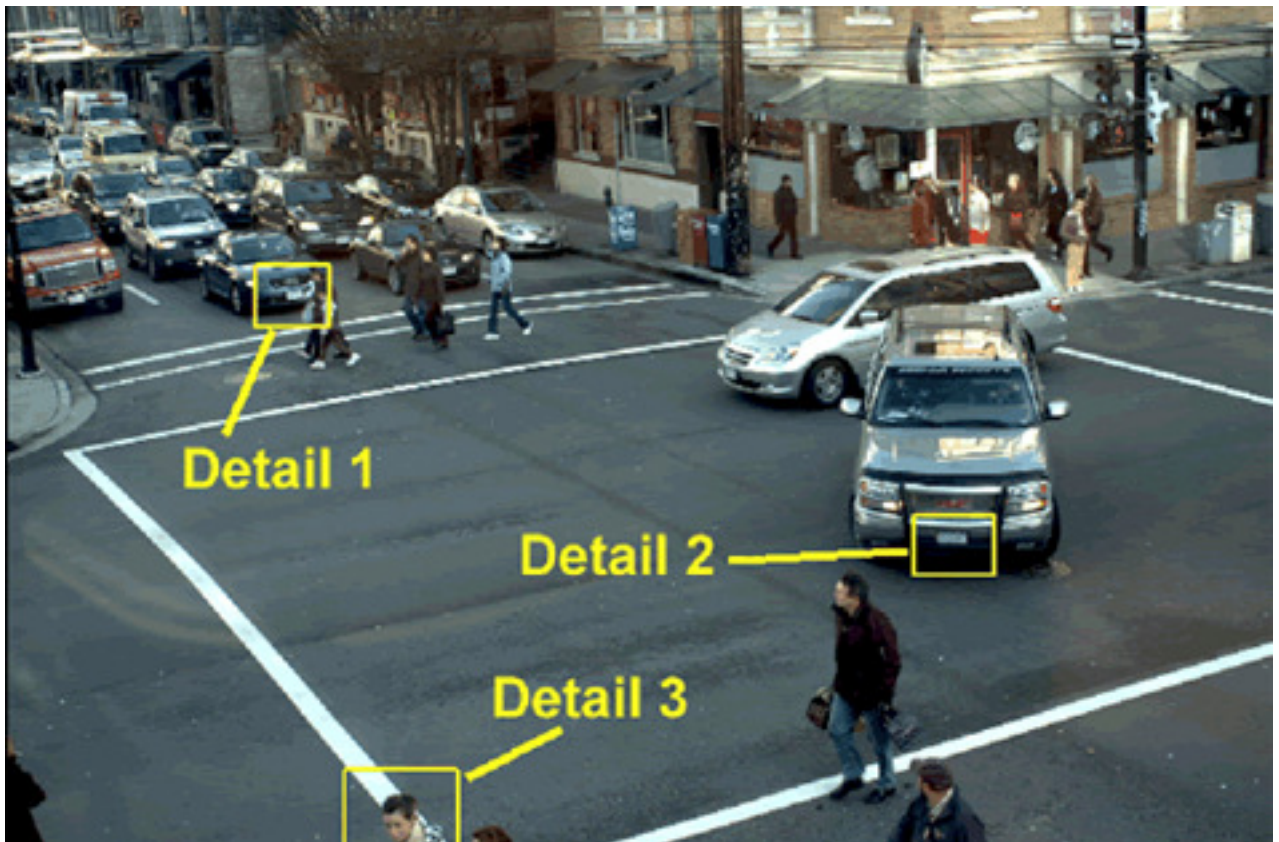
Given the pros and cost of each camera type, the decision really comes down to your specific surveillance needs. With an accurate assessment of your needs, the decision of which camera type to go with will become much easier.

IP vs. Megapixel

There is difference between megapixel and ip cameras; IP cameras are generally the same resolution as an analog camera with a built-in video encoder to convert the analog signal into an IP address. Hybrid CCTV Solutions, a mixture of analog and IP/megapixel cameras have been becoming more popular since existing CCTV infrastructures could be tied in using one NVR/Software interface.

High-definition (HD) or Megapixel (MP) IP cameras are now available that offer a huge jump in image quality compared to conventional surveillance cameras. Resolutions are available as 1.3,2,3,5,8 and up to 16 megapixels (16 megapixels, 4872x3248 pixels, in resolution contains over 50 times more detail than images captured with conventional surveillance systems).

The images below illustrate how HD surveillance systems can capture full situation awareness as well as fine detail. HD CCTV Cameras are also available in 1.3,2,3,5, or 8 Megapixels.





Detail 1



Detail 2



Detail 3

A high-end 540TVL (720X540 = 0.389 megapixels; A standard IP camera or analog cameras are 640X480 = 0.307 megapixels) camera would only be able to view this image and would then need to be zoomed in telescopically via PTZ to view the detail losing the rest of the picture that is out of view.

With Megapixel cameras, forensic zooming can be capable while its simultaneously recording onto the NVR (network video recorder) server as the whole picture and vice versa by watching recorded video while forensic zooming on the desired view. The ability to capture not only situational awareness the big picture of what is going on but also fine details that can be used for license plate reading and identifying people. The combination of situational awareness and detail allows security operators to react faster and reduce investigation time, all

with a higher probability of prosecution and conviction. Trying to achieve this with an analog camera would not be possible as 0.3 megapixel would simply not be enough pixel resolution to achieve this. New HD surveillance solutions that preserve image quality are transforming the surveillance industry.

One of the most compelling advantages of high-definition surveillance systems is their ability to capture not only situation awareness the big picture of what is going on but also fine details that can be used for license plate reading and identifying people. The combination of situational awareness and detail allows security operators to react faster and reduce investigation time, all with a higher probability of prosecution and conviction.