

ANALOG vs. MEGAPIXEL


Customers often ask us at **CCTV Security Pros** to explain the difference between **analog** and **IP-based (megapixel)** security camera systems. However, we find there are more similarities than differences. In other words, both our DVR and NVR units utilize the same operating software and offer the same ability to view, record and playback multiple cameras, both locally as well as remotely over the Internet, from any computer, smartphone or tablet.

Analog cameras have been a universal standard for decades in the industry of CCTV surveillance. Analog cameras transmit video from the camera to a digital video recorder. Each analog camera is connected using RG59 siamese cable, which bundles the video and power together. The video cable gets connected to the DVR and the power is plugged into a power box or power supply. The DVR then converts the analog signal to digital for storage.

IP (megapixel) cameras have been more recently introduced to the CCTV surveillance market. IP cameras also capture analog images, but immediately convert the signal to digital inside the camera. The signal is then transmitted over a network using Ethernet (CAT5) cable. Power can be run over the same cable using Power-Over-Ethernet (PoE). Each IP camera comes included with its own software which can be used to view (and in certain cameras, record and playback) video by itself. Most customers use a network video recorder, which must be connected to the same network for storing video from multiple IP cameras.

Both types of systems have proven to be highly reliable and effective for video monitoring. However, the decision to use analog or IP cameras sometimes depends on the application. We put together a comparison chart below which lists some of the differences to help you make the right decision based on your specific monitoring needs. Additionally, we have provided analog and megapixel images for visual comparison.

Please feel free to visit our Web site at www.cctvsecuritypros.com or call us for expert advice at **888-653-2288**.

 SecurityPros.com	ANALOG	IP (MEGAPIXEL)	Comments
COST	Lower Cost	Higher Cost	<i>As IP technology grows, the cost should continue to decline</i>
RESOLUTION	High Quality Video: 720 x 480 / 960 x 480	High Definition Video: 1280 x 720 / 1920 x 1080	<i>IP Cams have 2-3 times more resolution than Analog Cams</i>
ZOOM CAPABILITY	Image may become pixelated when zooming digitally	Greater digital zoom capability for facial and object recognition	<i>Stronger lenses can help Analog Cameras zoom optically</i>
BRAND COMPATIBILITY	Universal (BNC Connectors)	Based on IP Protocol	<i>Refer to our IP Camera Compatibility List</i>
SPECIAL APPLICATIONS	Available	Limited	<i>License Plate Cams, Hidden, Infrared Night Vision, Audio</i>
VIDEO STORAGE	Consumes Less HDD Space	Requires More HDD Space	<i>Encode settings can be adjusted to best utilize HDD space</i>
VIDEO SIGNAL	Up to 700 ft. over RG59 coax or 1200 ft. over CAT5 with baluns	Up to 325 ft. over CAT5 w/o need for additional hardware	<i>IP Cameras offer remote network integration</i>
POWER SIGNAL	About 500 ft. over power cable (depends upon camera)	Up to 325 ft. over CAT5 using PoE (Power over Ethernet)	<i>All cameras can be powered locally using a power adapter</i>

COMPARISON 1: Video From 10 Feet

SOURCE: 960H - 960 X 480



SOURCE: 1080P - 1920 X 1080



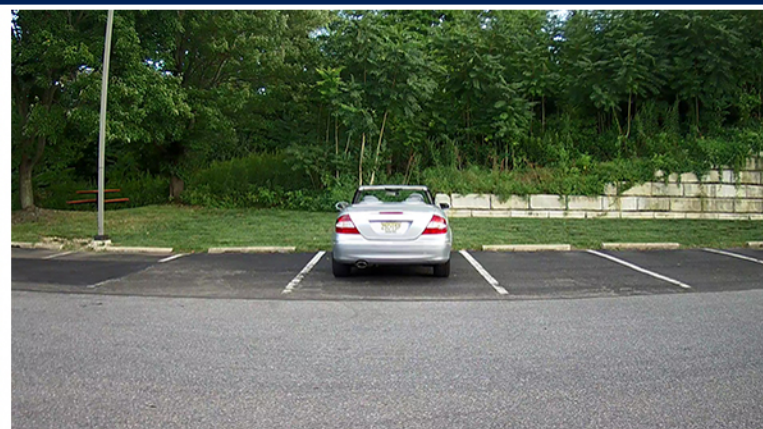
In **Comparison 1**, we show video from an **analog** camera along side a **megapixel** camera from **10 feet**. As you can see, from close distances, there isn't much of a difference in terms of image quality.

COMPARISON 2: Video From 30 Feet

SOURCE: 960H - 960 X 480



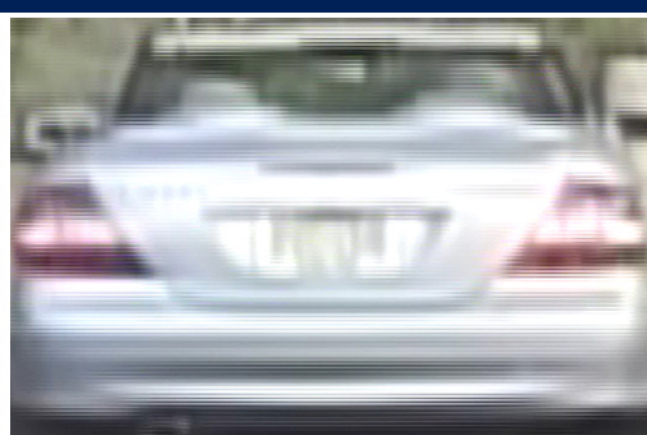
SOURCE: 1080P - 1920 X 1080



In **Comparison 2**, we show video from an **analog** camera along side a **megapixel** camera from **30 feet**. Megapixel cameras offer some increased clarity for facial and object recognition from father distances.

COMPARISON 3: Digital Zoom Results

DIGITAL ZOOM: APPROX. 10X



DIGITAL ZOOM: APPROX. 10X



In **Comparison 3**, we show **digital zoom** results from the images displayed in Comparison 2 above. Analog becomes pixelated while megapixel remains sharp. This is one of the most notable differences.

COMPARISON 4: Optical Zoom Results

SOURCE: 960H - 960 X 480



SOURCE: 1080P - 1920 X 1080



In **Comparison 4**, we show **optical zoom** results from both **analog** and **megapixel** cameras from **30 feet**. An analog camera with a 5-100 mm lens provides more powerful optical zoom which compensates for any lack of digital zoom capability. In this comparison, the image quality is relatively similar.

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See the Difference