



Supreme Night Visibility Technology

White Paper



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Introduction

Low light levels have always been a severe challenge for cameras, and performance under such conditions is considered an important metric of a camera's capabilities. The issue of low-light performance is particularly acute for security cameras, as they are often tasked with capturing clear video at night or in environments where lighting conditions are poor.

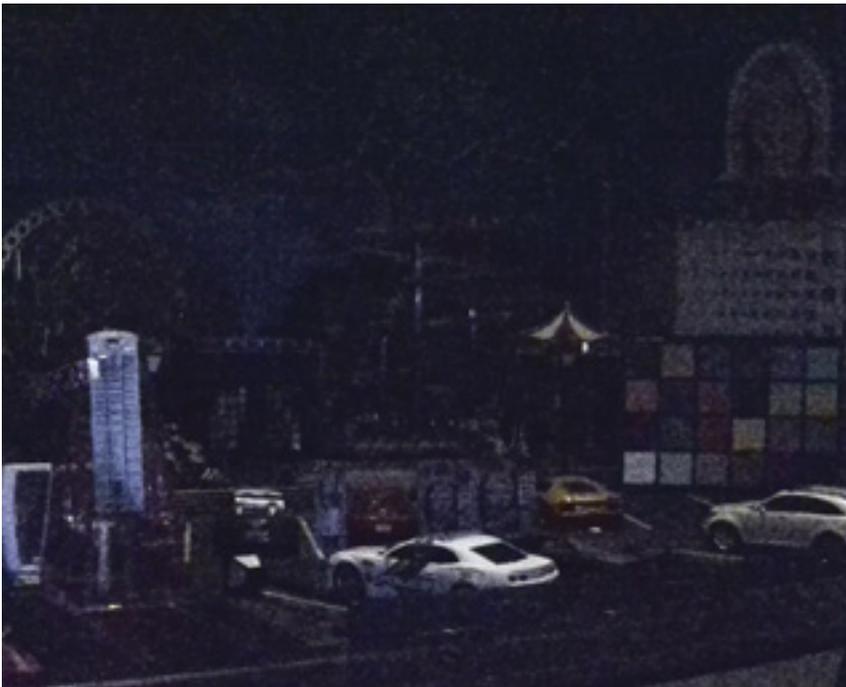
The addition of infrared capabilities marked a significant advance for security cameras, allowing usable video to

be captured when there is little or even no visible light present. However, the use of infrared remains a less than ideal solution, since only monochrome footage is possible. Color, after all, can be a critical factor in the success of many sophisticated security applications. To cite just one example, the ability to discern of the color of a person of interest's hair, eyes, skin, and clothes can mean the difference between success and failure in making a positive identification.

Supreme Night Visibility Technology

VIVOTEK developed Supreme Night Visibility (SNV) technology in order to deliver the absolute best quality imaging even at extremely low levels of light, achieving a minimum signal level of 30 IRE at a 1/30s shutter speed and ambient illumination of a negligible 0.1 lux. The effort was made to not only to improve clarity and reduce noise with little illumination, but also to preserve the ability to capture color

imagery even at lux levels where conventional night cameras are forced to rely on infrared capture. SNV technology represents a comprehensive approach to the problem, the result of VIVOTEK's effort to identify every aspect where improvements to low-light performance could be achieved.

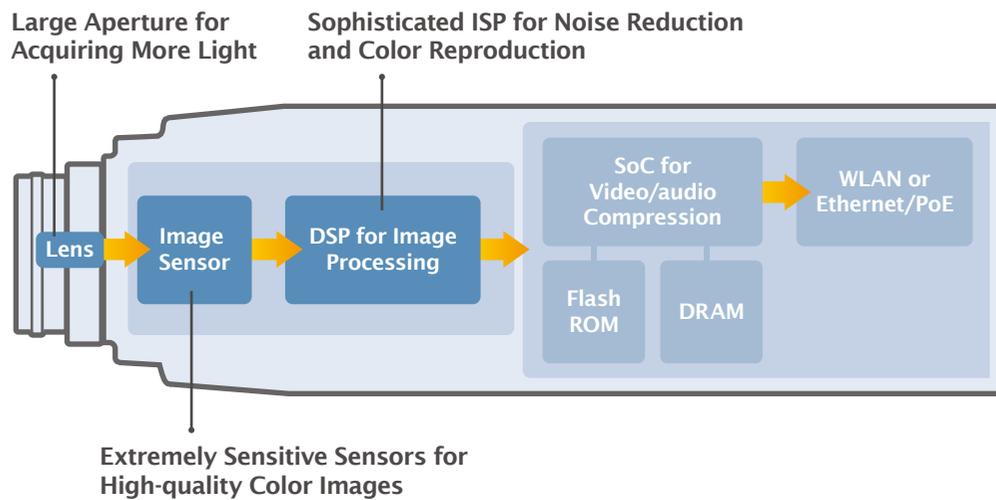


IP8155HP @ 0.1 Lux
Signal Level: 30IRE
Shutter Speed: 1/30s
Gain: Max

VIVOTEK's approach with SNV combines optimized hardware and software. On the hardware side, SNV takes advantage of extremely sensitive optical sensors that capture high-quality color video even when virtually no visible light is available. These sensors are integrated with cutting-edge image signal processing chips to ensure sufficient contrast and accurate color reproduction. Best-of-class hardware components are

then integrated with advanced software designed to reduce noise, enhance contrast, sharpen details, and bring out color. An example of VIVOTEK's willingness to go the extra mile is in its 3DNR noise reduction technology, which combines algorithmic analysis of both single frames and successive frames in order to eliminate visual artifacts and bring out detail.

By professionally integrating superior optical components and sophisticated video algorithms, VIVOTEK SNV cameras present Supreme Night Visibility in low light conditions.



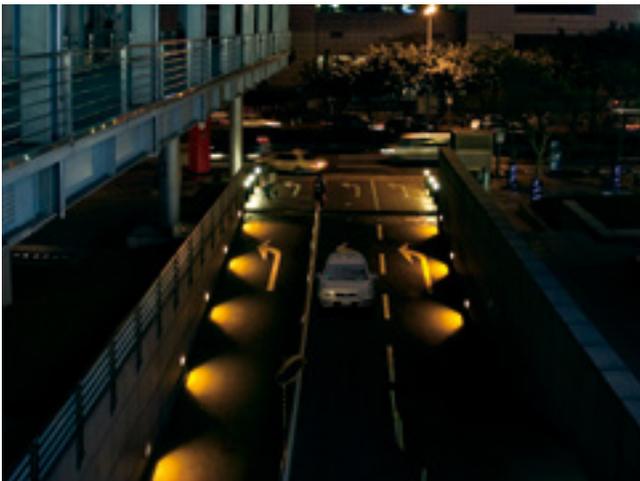
Compared with the previous generation SNV, the IP8155HP featuring the latest SNV technology can deliver more details with minimum noises in extremely low lux conditions.

Technology Years Ago	Technology of Today
 <p>IP8151P @ 0.3 Lux</p>	 <p>IP8155HP @ 0.3 Lux</p>
 <p>IP8151P @ 0.1 Lux</p>	 <p>IP8155HP @ 0.1 Lux</p>

Applications and Benefits

Cameras bolstered by Supreme Night Visibility technology are particularly well-suited for monitoring environments when low-light conditions prevail—and especially when color imagery is desirable to enable or enhance the ability to identify persons or objects of interest. Unlike conventional day-and-night surveillance cameras, which shift to black-and-white video even at light levels at which the human eye can still perceive color, cameras equipped with SNV technology can capture colors even in very dark conditions.

In view of these advantages, cameras incorporating SNV technology are ideal for monitoring typically low-light indoor environments such as warehouses and retail spaces outside of business hours, as well as outdoor areas such as school campuses, parking lots, roads, and construction sites where effective nighttime monitoring can be as important, if not more important, than daytime monitoring.



Traffic Monitoring



Warehouses

Moreover, due to the excellent image quality of the video captured by SNV cameras, they make sophisticated applications requiring clear detail and benefitting from color data—such as license plate and facial recognition—possible even under challenging low-light conditions.

For exceptionally high-quality video with accurate color and cleanly captured detail at extremely low lux levels—with use of infrared capture reserved only for those scenarios where virtually no visible light or none at all is present—VIVOTEK's Supreme Night Visibility truly reigns supreme.



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