Test the Best!

Together with Seetec, GIT SECURITY has tested both current and new video cameras in the test lab of the Hardware Competence Centers of Seetec under controlled conditions. The Hardware Competence Center was formed because manufacturer's own data and the features of network cameras were often established under different conditions and were not reliable facts when put into practice. These results provide a valid basis for the planning of IP video projectors and help to prevent unpleasant surprises. Video sequences are created for the tests under various defined light situations and then evaluated. Both movement in the picture and night or backlight situations are taken into account.

In Focus: Samsung SNB-7000

The SNB-7000 is a true day/night ONVIF compliant 3 Megapixel box camera that incorporates Samsung's WiseNet2 DSP chipset. This camera is capable of displaying multiple resolutions from CIF (320 x 240) through to 16:9 format 1080p full HD and up to 3 megapixel (2,048 x 1,536). The SNB-7000 Series cameras feature Smart Compression where a predefined Region of Interest or faces (face detection) are compressed differently than the rest of the image making them clearer while maximizing bandwidth and storage efficiency.

Performance

Performance when used at 1,000 Lux
Overall, the camera delivers a clear image with good brightness and contrast. The colors appear somewhat pale and to some extent, especially with blue tones, a slight red or yellow tinge is apparent, depending on the brightness. The image sharpness is good. Both the lines of the test chart and the hairs of the test figure are sharply depicted. With good illumination, no significant movement blur can be detected and image noise is also minimal.

Performance when used under 1,000 Lux
The camera reacts very quickly to changes in lighting conditions. With reducing illumination, the camera image becomes darker overall (mainly below 250 Lux), and the camera cannot fully compensate for poorer illumination. In the test image, all brightness gradations can no longer be seen correctly, however overall the contrast does not change significantly. With reducing illumination the colors appear paler and darker. The camera only automatically switches to night mode at 0.5 Lux, so that at 20 Lux or less, a perceivable and later definite noise is apparent in the image. In this region, the image sharpness also reduces.

Performance when used in backlight situations
In spite of a brief image failure on the occurrence of backlight with dark surroundings (the camera produces a white image with flashing black stripes) for about ½ second, after 1.5 seconds the camera delivers the first image, which becomes stable after a further 1.5 seconds. Above all with low ambient illumination the backlight source produces glare, however outside of the glare cone background details are clearly recognisable.

Performance in use: bandwidth measurement
The camera requires a highly constant bandwidth with an average of 8.7 MBit/s with Full HD resolution and 29 images/second. Fluctuations are apparent, especially with backlight. Here the compensation processes affect the bandwidth.

Summary
This day/night fixed-focus camera is an all-round device, which is characterised by its high resolution (3 megapixel). It is equipped with a slot for SD cards and is supplied with power via PoE. In addition it also supports 2-way audio transfer and simple onboard video analysis algorithms

Technical data for the camera test

Manufacturer	Samsung
Model	SNB-7000
Firmware version	1.00
Distance to test chart	0,8 m
Lens used	Tamron 3 – 8 mm 1:1,0 1/3 CCTV MP
*Chosen focal length	6 mm
*Compression method	H.264
*Resolution	1,920x1,080
*Compression	50%
Max. stream bandwidth	unlimited
Measured frame rate	29 fps
Average bandwidth	8.7 Mbit/s

*The camera was integrated into the test system with the "default" settings. The settings were modified according to the test criteria listed above.

Assesment with differing illumination conditions

Criteria | Lux values	1000 Lux	100 Lux	10 Lux	0,5 Lux	0 Lux + *BL1
Colours	2.5	3	3	3.5	–
Contrast	2.5	2.5	2.5	2.5	–
Focus	2	2	2	3.5	2.5
Motion sharpness	2	2	2.5	3	2.5
Image noise	2	2	2	3	2
Recovery from backlight	–	–	–	–	3
Performance against backlight	–	–	–	–	2.5

Assessment was performed according to the rating system of 1 (very good) to 6 (unsatisfactory). By setting various parameters on the camera interface itself, it is possible to obtain an improved image quality.