Test the Best!

Seetec and GIT SECURITY test video cameras in the test lab of the Hardware Competence Center at SeeTec under standardized conditions. The results provide a solid basis for the planning of IP video projects and help to avoid embarrassing surprises. For the test procedure video sequences are created under various different fixed lighting conditions and subsequently evaluated. Movement in the picture as well as night and backlight conditions are also included.

In Focus: Samsung SND-6084-R

The SND-6084 is a dome camera for use indoors, from the new Samsung camera series equipped with the WiseNetIII- chip set. The Full HD network camera delivers high resolution 2 megapixel images and is equipped with a whole series for modern functions, e.g. 100dB WDR for difficult lighting conditions such as backlight. It promises clear colour images even in poor light down to 0.1 lux (F1.2, 50IRE) and has an integrated, motorised varifocal lens for simple focussing. The camera power supply is via PoE. There are simple image analysis algorithms directly on the camera. Further features are De-Fog (guarantees clear images, even under misty conditions), Face Detection (detects faces, but does not classify them), Smart Codec (division of the recorded image into areas with different quality) Audio Event- Detection.

CAMERA TEST

Performance

Assessment of performance at 1,000 Lu
The Samsung SND performs excellently in the very well illuminated initial situation. The excellent sharpness and brilliant colours are especially worth mentioning. However, a slight distortion of blue colours must be stated. Under the given conditions, the recorded image is fluid at an image rate of 30 fps.

Assessment of performance below 1,000 Lux
Even with lightin values below 1000 Lux colour depiction, sharpness and contrast remain largely constant. A minimal deterioration of both sharpness and contrast only occurs below 10 Lux. At 0.5 Lux the camera switches from colour into b/w mode and even with poor illumination it delivers a comparably high contrast and sharp image.

Assessment of performance in backlight situations
The camera initially remains in b/w mode, even on the sudden occurrence of backlight. The compensation time of about 5 seconds is comparably long. In spite of the large blooming area, details in the edge regions are relatively easily recognised. Because of this, movements are also well illuminated and no smearing effect is noticeable. Image noise is considerably better that at low light levels, so that overall, the performance of the camera in backlight situations is better than at low lighting levels such as 0.5 Lux.

Assessment of performance in use: bandwidth measurement
The Samsung SND has a very constant use of bandwidth. Both in the "variable" and "constant" settings, the recorded results were identical. The use of bandwidth by the camera is low, at about 5 MB/sec. Below 0.5 Lux, the use of bandwidth reduces even further, due to the switchover from colour to b/w mode.

Conclusion
In all of the tested areas, the Samsung SND delivers very good results. The only restriction is the relatively long compensation time in backlight situations. The infra-red light ring integrated into the camera should be mentioned; however for reasons of comparability, this was not taken into account in the test. The test run was performed at 30 fps, although the camera can deliver 60 fps in Full HD.

Technical data for the camera test

Manufacturer	Samsung
Model	SND-6084R
Firmware version	1.00_1200412
Distance to test chart	0.6 m
Lens used	3~8.5mm (2.8x) motorized varifocal
* Focal length set	ca. 6 mm
*Compression method	H.264
*Resolution	1920x1080
*Compression	50%
I-Frame-interval	1 second
Max. stream bandwidth	4,096 Kbit/s
Measured frame rate	30 fps
Average bandwidth	5.24 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.

Assessment with differing illumination conditions

Criteria | Lux values	1000 Lux	100 Lux	10 Lux	0,5 Lux	0 Lux + *BL1
Colours	2	2	2	b/w	b/w
Contrast	1.5	1.5	2	2.5	3
Focus	1	1	1.5	2	2
Motion sharpness	2.5	2.5	2.5	3	2
Image noise	1.5	1.5	2	2.5	2
Recovery from backlight	–	–	–	–	4
Performance against backlight	–	–	–	–	1.5

Assessment was performed according to the rating system of 1 (very good) to 6 (unsatisfactory).
BL= Backlight *in the beam of a white light LED