

In Focus: Bosch NDN-498

The Bosch NDN-498 FlexiDome2X day/night IP camera is a CCD full image camera in a compact, very robust and vandalism-protected housing. The cameras have a 1/3 inch CCD chip and a 20-bit DSP with 2X dynamic that help to provide a wider dynamic range and sharper, more detailed images with exceptional color reproduction. FlexiDome2X IP cameras have integrated video movement recognition and can be fitted with an additional processor for video image analysis.



CAMERA TEST

Performance

Performance at 1000 Lux

During the test the camera delivered a generally good and balanced image under good lighting conditions. Colors were clear and without any tint. Slight weaknesses were visible in the contrast, with dark areas of the image in general tending to be too light. Moving and static objects are reproduced sharply and cleanly.

Performance at less than 1000 Lux

With sinking light levels in the test, the contrast reduced slightly, the colors were somewhat weaker, the image remained clear however. Even under poor lighting conditions the image rate remained fluid, moving objects were relatively sharp and detailed and there were hardly any artifacts to be seen. The camera has an automatic day/night switchover although it still provides color information at 0.5 Lux. The colors are only reproduced very weakly at this level of light but the picture stays clear and sharp.

Performance in backlight situations

The camera needs about 2 seconds when confronted with sudden backlight in a dark environment before providing a stable image. In total, the recovery time is around 3 seconds. The CCD sensor allows some smearing that appears in the form of a vertical stripe in the picture. Around 250 Lux the camera needs a comparatively long time (c. 5 seconds), to correctly compensate for the effect of backlight.

Evaluation of bandwidth usage

The camera was tested under H.264 with maximum definition. The bandwidth required at c. 0.5 Lux and also under backlight conditions remained relatively constant at an average of 4 MB/s. Under worse lighting conditions (under 0.5 Lux) the data rate also reduces. The highest level measured was 4.73 MB/s.

Technical data for the camera test

Manufacturer	Bosch
Model	NDN-498
Firmware version	01500411
*Distance from test chart	0.7 m
Objective used	2.8 mm – 10 mm
*Set focal length	c. 6 mm
*Compression method	H.264
*Resolution	704 x 576
Compression	50 %
*Set stream bandwidth	unlimited
Measured frame rate	24 fps
Average measured bandwidth	3.35 MBit/s

The camera was integrated into the test system with the "default" settings and correspondingly modified with 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	2.5	2.5	2.5	3	b/w
Contrast	2.5	2.5	2.5	3	–
Sharpness	2.5	2.5	3	3	2
Motion sharpness	2	2	2.5	3	2.5
Image noise	2	2	2.5	3	2
Compensation time for backlight	–	–	–	–	2.5
Backlight characteristics	–	–	–	–	–

Assessment according to the following grades: 1 (excellent), 2 (good), 3 (average), 4 (satisfactory), 5 (limited), 6 (poor)

* Average value.

Summary

The vandalism-protected PoE dome camera with day/night switchover impressed during the test with a good and balanced image quality, even under weak lighting. As well as two H.264 image streams, the camera can also simultaneously deliver an MJPEG stream. It is therefore possible to use different streams for live viewing, archiving and video analysis.