

In Focus: Canon VBH-610D

With the VBH 610D, Canon offers a Full-HD dome camera for indoor use. Top class Full-HD-image quality is provided by the Canon DIGIC DV III image processor. Optimised noise reduction (Noise Reduction – NR) and first class colour reproduction even at low light levels promise clear colours even with poor illumination. The network camera is equipped with additional functions and analysis functions such as detection of changes in noise level (in addition to visual events, the camera also detects audible events) and detection of movement. The camera supports the ONVIF standard ONVIF V2.2 (Profile S). A practical electronic mechanism to adapt the camera to the particular conditions makes configuration especially easy: after the camera has been mounted, the settings for pan/tilt/rotation/zoom can be remotely set from a computer in the network.



CAMERA TEST

Performance

Assessment of performance at 1,000 Lux

With good illumination conditions, the Canon camera delivers a very good colour image. The very crisp white balance is notable. The good overall image is impaired by slight noise; however this is not significant under optimum conditions.

Assessment of performance below 1,000 Lux

A notable, highly positive feature of the camera is the sharp imaging. Even with reducing illumination, the test sequences are depicted with brilliant sharpness. Colour depiction remains good, however a minimal deterioration can be detected. With a light intensity below 1000 Lux a slight increase in image noise is also observed. Below 0.5 Lux the test values suffer noticeably, however this behaviour is frequently noticed.

Assessment of performance in backlight situations

In backlight situations, the Canon requires an acceptable switchover time of 3 seconds. With a larger-than-average light beam there is wide area illumination of the situation. The individual test values (sharpness, movement blur, image noise) are appropriate for this situation. The only disturbing factor is the colour cast: the image has an unnatural red cast, which is accompanied by a slight smearing effect.

Assessment of performance in use: bandwidth measurement

The Canon demonstrates a constant behaviour with the variable image rate setting. The use of bandwidth does not show any significant deviations upwards or downwards. The average usage value is 4.9 MB/sec. The camera only attempts to compensate for a lack of light by increasing the bandwidth at low levels of illumination. For brief periods there is a peak value of about 8 MB/sec.

Conclusion

Image sharpness is the characteristic which should be highlighted for the Canon. Under all lighting conditions there were very good or good results. The homogeneous performance can also be applied to the depiction of colours. Here, in spite of low Lux values, impressive test results were obtained. The camera is equipped with a b/w option (night mode).

Technical data for the camera test

Manufacturer	Canon
Model	VBH-610D
Firmware version	1.1.0
Distance to test chart	0.20 m
Lens used	2.8 mm– 8.4 mm
*Focal length set	ca. 4 mm
*Compression method	H.264
*Max. Resolution	1920x1080
*Compression	–
I-Frame-interval	1 second
Max. stream bandwidth	4,096 Kbit/s
Measured frame rate	30 fps
Average bandwidth	8.3 Mbit/s

* The camera was integrated into the test system using ‚default‘ settings and 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	2	2	2.5	3
Contrast	2	2	2.5	3	3
Focus	1.5	1.5	2	3	2.5
Motion sharpness	2	2	2	2	2
Image noise	2.5	2.5	2.5	3	2.5
Recovery from backlight	–	–	–	–	2.5
Performance against backlight	–	–	–	–	2.5

Assessment according to the following grades: 1 (Excellent) 2 (good), 3 (average), 4 satisfactory), 5 (limited), 6 (poor). BL= Backlight *in the beam of a white light LED