In Focus: JVC VN-H37U

JVC's VN-H37U is part of JVC's new Super LoLux HD line of network cameras equipped with 1/3-inch CMOS imagers that can deliver up to 30 fps full frame rate, progressive HD images and offer multi-codec support. The new Super LoLux HD cameras promises to deliver superior color reproduction, even in low light, and match the sensitivity of JVC's well established CCD-based cameras. The VN-H37U includes Clear Logic Video Intelligence image processing, which compensates for back lighting and digitally removes ambient fog, haze, rain, or smoke. that can deliver up to 30 fps full frame rate, progressive HD images. Other features include auto back focus, on-board recording to SD card, motion detection, privacy mask, and a variety of built-in video analytics features, including active tampering detection, and audio detect.

CAMERA TEST

Performance

Performance assessment when used with 1,000 Lux
The camera produces a good image under optimum lighting conditions. Colours appear on the warm side, with a slight red tint. The contrast rendition is good, and minor tonal shades are also clearly visible. Static and moving objects are reproduced very sharply. There is no evidence of image noise.

Performance assessment when used with less than 1,000 Lux
As is to be expected from a camera that has been optimised for low light performance, the VN-H37U also produces a very clear image in poor lighting conditions. The camera's recovery performance is good; the contrast ratio is adjusted to the respective lighting situation. Under 10 lux, slight noise is perceptible in some colour fields. Under 2 lux, the noise affects the entire image; colours are notably paler; and the image loses definition. It should be noted that the integrated 3D-DNR noise reduction is automatically deactivated at frame rates of more than 15 images/second – hence, this was not assessed during the test. Even under 0.5 lux, the scenery is still clearly visible and smearing is slight. And at considerably less than 0.5 lux, the camera continues to produce images in which the big picture is still vaguely recognisable. However, even slight lighting changes result in long recovery times here.

Performance assessment in backlight situations
The camera also performs well in back light situations. After just 1.5 seconds, it produces a stable black/white image. In the process, the back light compensation system clearly overexposes the image. Background details, however, are still clearly visible. Switchover to colour mode occurs relatively late.

Performance assessment in use: Bandwidth measurement
The bandwidth required at 1000 to ca. 0.5 lux remains very constant at 4.5 MB/s. Under back light conditions in particular, the bandwidth requirement clearly reduces – here, the highest level reached is just over 8 MB/s

Conclusion
Even with weak scenery illumination, the very light-sensitive PoE camera produces good images, with up to full HD resolution. Restricting the frame rate to 15 images/second deactivates the integrated noise reduction. Up to three image streams (H.264 and MJPEG) can be delivered simultaneously.

Technical data for the camera test

Manufacturer	JVC
Model	VN-H37U
Firmware version	0.09.115
Distance to test chart	0.7 m
Lens used	Tamron MP 2.8-8 mm IR1:1.2 1/3 CCTV CS
*Focal length set	6 mm
*Compression method	H.264
*Resolution	1280 x 720
*Compression	50%
I-Frame-interval	1 second
Max. stream bandwidth	unlimited
Measured frame rate	30 fps
Average bandwidth	4.5 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	2	2	2.5	b/w
Contrast	2	2	2	2.5	2.5
Focus	1.5	2	2.5	2.5	2.5
Motion sharpness	1.5	1.5	2	2.5	1.5
Image noise	1.5	1.5	2.5	3	2
Recovery from backlight	–	–	–	–	1.5
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 (SSNR, WDR, BLC on/off)), it is possible to obtain an improved image quality.   *BL= Backlight