## In Focus: Axis P3344

The Axis P3344 fixed dome network camera with tamper-proof housing is a fixed direction dome camera, which is specially designed for inconspicuous interior video surveillance. It provides 1 MP or HDTV 720p resolution and fulfils the SMPTE standard with regard to resolution, colour reproduction and image rate. The wide dynamic range and day and night functionality provides clear images both in daylight and under poor lighting conditions. Several H.264 video streams and motion JPEG video streams can be produced simultaneously, either at full image rate or individually optimised for various quality requirements and bandwidth restrictions.

# Test the best!

## GIT SECURITY Camera Test in cooperation with SeeTec

### Performance

**Performance assessment when used with 1,000 Lux**
In comparison with the reference image, at the maximum resolution tested, the Axis P3344 showed a slightly overmodulated colour range and very good sharpness. In addition, the device showed a good to very good contrast ratio.

**Performance assessment when used with less than 1,000 Lux**
At a Lux value or 20, lack of sharpness was detected for moving objects in the lower half of the sequence. This did not deteriorate significantly down to 0.5 Lux and resulted in a slight loss of recognition of moving objects at approx. 5 Lux. At 0.5 Lux there is slight image noise, although this is only significantly noticeable after switchover from day to night mode.

**Performance assessment in backlight situations**
The compensation time with backlight is approx. 2 seconds and shows good dynamic characteristics. The size of the cone of illumination extends from the edge of the backlight to over the entire object and shows slight traces of smearing.

**Performance in use: Bandwidth measurement**
On closer examination of the characteristic curve, the compensation behaviour of the H.264 codec becomes clearly apparent. Depending on the lighting conditions and the movement in the image, a slight to large increase or decrease was detected. From this it can be deduced that a variable bit rate is used, which provides a higher quality with overall less memory capacity. With comparable quality, an MPEG stream provides a measured average data rate of approx. 20 Mbps, which corresponds to a reduction in bandwidth by a factor of 9.25 in comparison to the measured 2.16 Mbps of the H.264 stream.

*Average value.

### Technical data for the camera test

| Manufacturer | Axis |
|---|---|
| Model | P3344 |
| Firmware version | 5.05 |
| *Distance from test chart | 1.05 m |
| Lens used | 3.3–12 mm: f1.6 |
| *Set focal length | approx. 6 mm |
| *Compression method | H.264 |
| *Resolution | 1,280 x 800 |
| Compression | 30 % |
| I-frame interval | 1 second |
| *Set stream bandwidth | unlimited |
| Measured frame rate | 30 fps |
| Average measured bandwidth | 2.16 Mbit/s |

The camera was integrated into the test system with the default settings and modified according to the test criteria listed above

### Assessment table for various lighting conditions

| Criteria \| Lux values | 1,000 Lux | 100 Lux | 10 Lux | 0,5 Lux | 0 Lux + *BL1 |
|---|---|---|---|---|---|
| Colours | 2.5 | 3 | 3 | b/w | b/w |
| Contrast | 2.5 | 3 | 3 | b/w | b/w |
| Sharpness | 2.5 | 3 | 3 | 4.5 | 3 |
| Motion shaprpness | 2 | 2.5 | 3 | 4 | 3 |
| Image noise | 2 | 2.5 | 2.5 | 2 | 3.5 |
| Compensation time for backlight | – | – | – | – | 3 |
| Backlight characteristics | – | – | – | – | 4.5 |

Assessment was performed according to system for German school grades from 1 (very good) to 6 (unsatisfactory)

### Conclusion

The Axis P3344 fixed dome network camera provides a resolution of one megapixel or HDTV 720p and fulfils the SMPTE standard with regard to resolution, colour reproduction and image rate. The wide dynamic range and day and night functionality provides clear images both in daylight and under poor lighting conditions. With the aid of the remotely controlled zoom function the optimum angle of view and the required resolution for the environment can be set during installation. By means of the remote controlled focusing the camera can be installed even more conveniently, as manual focusing of the camera is not necessary.

# In Focus: Panasonic WV-NW502

The vandal-proof fixed dome network camera WV-NW503 and the WV-NP502 network camera, which is equivalent except for the physical design and the lens, are new to the Panasonic range this year. Both cameras are equipped with the Panasonic Super Dynamic Technology. The cameras should provide jerk-free images with 1,280 x 960 pixels and excellent dynamic characteristics due to the combination of a 3 megapixel CCD and the Super Dynamic Digital Signal Processor (DSP). The cameras support the transmission of several parallel image streams (multiple streaming) and can transmit H.264/MPEG-4 and JPEG simultaneously, to enable both real-time surveillance and high resolution saved images.

# Test the best!

## GIT SECURITY Camera Test in cooperation with SeeTec

**TEST**

## Performance

### Performance assessment when used with 1,000 Lux
In comparison with the reference image, at maximum resolution the Panasonic WV-NW showed a slightly milky colour range of clear appearance and good to very good sharpness. In addition, the Panasonic high-end model features a good contrast ratio. Performance assessment when used with less than 1,000 Lux

### Performance assessment when used with less than 1,000 Lux
At a Lux value or 1,000, lack of sharpness was detected for moving objects in the lower half of the sequence. This did not deteriorate significantly down to 2.5 Lux and resulted in loss of recognition of moving objects below 0.5 Lux. Slight image noise only occurred at 0.5 Lux.

### Performance assessment in backlight situations
The compensation time with backlight is approx. 4 seconds and shows satisfactory dynamic characteristics. The size of the cone of illumination extends from the edge of the backlight and to some extent over the entire object and shows slight traces of smearing and blooming.

### Performance in use: Bandwidth measurement
On closer examination of the characteristic curve, the compensation behaviour of the H.264 codec becomes clearly apparent. Depending on the illumination conditions and the movement in the image, a slight to severe increase or decrease can be detected, from which it can be assumed that a variable bit rate is used, which provides higher quality with overall less memory space. With comparable quality, an MPEG stream provides a measured average data rate of approx. *12 Mbps, which corresponds to a reduction in bandwidth by a factor of 3.5 in comparison to the measured 3.40 Mbps of the H.264 stream.

*Average value.

## Technical data for the camera test

| Manufacturer | Panasonic |
|---|---|
| Model | WV-NW502/WV-NP502 |
| Firmware version | 101E1 |
| *Distance from test chart | 0.35 m |
| Lens used | Fujinon; f 1.2 (wide); f 2.8–8 mm |
| *Set focal length | approx. 6 mm |
| *Compression method | H.264 |
| *Resolution | 1,280 x 960 |
| Compression | 50 % |
| I-frame interval | 1 second |
| *Max. stream bandwidth | 4,096 kbit/s |
| Measured max. frame rate | 29 fps |
| Average bandwidth | 3.40 Mbit/s |

The camera was integrated into the test system with the default settings and modified according to the test criteria listed above

The test was carried out in 1.3 megapixel mode, with which an image data rate of 30 frames per second can be achieved. The Back Focus mode was set to fixed, in order to avoid continuous compensation with changes in lighting. Day/night switchover was performed manually at 2 Lux. The test results also apply to the WV-NP502, as except for the physical design and the lens, this is equivalent to the WV-NW502.

## Assessment table for various lighting conditions

| Criteria | Lux values | 1,000 Lux | 100 Lux | 10 Lux | 0,5 Lux | 0 Lux + *BL1 |
|---|---|---|---|---|---|
| Colours | 2.5 | 2.5 | 2.5 | b/w | b/w |
| Contrast | 2 | 2 | 2.5 | b/w | b/w |
| Sharpness | 2.5 | 2.5 | 2.5 | 3 | 2.5 |
| Motion shaprpness | 2.5 | 2.5 | 3 | 4 | 3 |
| Image noise | 2 | 2 | 2 | 3 | 2.5 |
| Compensation time for backlight | – | – | – | – | 3 |
| Backlight characteristics | – | – | – | – | 3 |

Assessment was performed according to system for German school grades from 1 (very good) to 6 (unsatisfactory)

## Conclusion

With a resolution of up to 3 megapixel (2,048 x 1.536) and H.264 and MPEG-4 the WV-NW502 is a perfect solution for a wide range of applications. Support of multistreaming and JPEG transmission with a full image rate in 1.3 megapixel mode (up to 30 fps with a resolution of 1,280 x 960 pixels) enables simultaneous surveillance and high resolution image storage. In addition, the WV-NW502 also provides excellent colour reproduction under low light conditions as well as many innovative image setting possibilities. The SD/SDHC slot enables the recorded data to be directly recorded on an SD memory card. Further features of the WV-NW502 are the facility for the connection of a microphone and an analogue monitor and audio output via an external loudspeaker. Areas of use include airports, casinos, department stores or other locations where faithful colour reproduction and a vandal-proof housing are required.