AXIS 221 Day & Night
Network Camera

High performance, professional day and night network camera

The AXIS 221 Day & Night Network Camera is a high performance camera for professional surveillance and remote monitoring. AXIS 221 is designed to meet demanding security installations under all light conditions and is supported by the industry's largest base of application software for video and alarm management.

Thanks to the high-quality Pentax lens and progressive scan CCD (non-interlaced) image sensor, this camera delivers crisp, clear images even of objects moving at high speed in the dark. The AXIS 221 features a removable infrared cut filter, which enables color video in high and low light conditions as well as IR sensitive black/white video at night.

The integrated Power over Ethernet option eliminates the need for a power outlet, as power is supplied to the camera via the network cable, and a steady power stream can be guaranteed with a UPS (Uninterruptible Power Supply). Furthermore, the unique combination of simultaneous Motion JPEG and MPEG-4 streams allows systems to be optimized for both image quality and bandwidth-efficiency. Additionally, the product offers a complete set of security features such as multi-level password protection, IP address filtering and HTTPS encryption. The support for HTTPS provides a secure channel between camera and application and enables authentication of the video source.

- IR sensitivity for high quality images in low light conditions
- Progressive Scan provides full resolution images of moving objects, without distortions
- Power over Ethernet (IEEE 802.3af)
- Up to 45 frames per second in VGA 640 x 480 resolution
- Simultaneous Motion JPEG and MPEG-4
- Multi-window motion detection

AXIS COMMUNICATIONS

Make your network smarter

26327/EN/R4/0601

Specifications

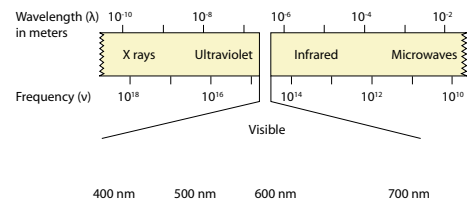|			
Image Sensor	1/3" Sony Wfine progressive scan RGB CCD	**Installation, management and maintenance**	Installation tool on CD and web-based configuration Configuration backup and restore Firmware upgrades over HTTP or FTP, firmware available at www.axis.com
Lens	Pentax TS3V310ED, F1.0 varifocal 3.0 - 8.0 mm, DC-iris, horizontal viewing angle: 35°-93°, focus range: 0.3 m to infinity. CS mount	**Video access from Web browser**	Camera live view, sequence tour capability for up to 20 Axis cameras, customizable HTML pages
Minimum illumination	Color mode: 0.65 lux, F1.0 Black and white mode: 0.08 lux, F1.0	**Minimum Web browsing requirements**	Pentium III CPU 500 MHz or higher, or equivalent AMD 128 MB RAM AGP graphic card, Direct Draw, 32 MB RAM Windows XP, 2000, NT4.0*, ME* or 98*, DirectX 9.0 or later Internet Explorer 5.x or later. For other operating systems and browsers see www.axis.com/techsup *Motion JPEG only
Video compression	Motion JPEG MPEG-4 Part 2 (ISO/IEC 14496-2), Profiles: ASP and SP		
Resolutions	16 resolutions from 640 x 480 to 160 x 120 via API, 5 selections via configuration web page	**System integration support**	Powerful API for software integration available at www.axis.com, including HTTP API, AXIS Media Control SDK, event trigger data in video stream, embedded scripting and access to serial port peripherals over HTTP/TCP. Watchdog secures continuous operation, can be monitored by other systems via event notification. Embedded operating system: Linux 2.4
Frame rate	Motion JPEG: Up to 45 fps at 640x480 60 fps at 480x360 or lower MPEG-4: Up to 24 fps at 640x480 30 fps at 480x360 or lower		
Video streaming	Simultaneous Motion JPEG and MPEG-4 Controllable frame rate and bandwidth Constant and variable bit rate (MPEG-4)	**Supported protocols**	IP, HTTP, HTTPS, SSL/TLS*, TCP, ICMP, SNMPv1/v2c/v3 (MIB-II), RTSP, RTP, UDP, IGMP, RTCP, SMTP, FTP, DHCP, UPnP, ARP, DNS, DynDNS, SOCKS, NTP etc. More information on protocol usage available at www.axis.com *This product includes software developed by the Open SSL Project for use in the Open SSL Tool kit (http://www.openssl.org/)
Image settings	Compression levels: 11 (Motion JPEG)/23 (MPEG-4) Rotation: 90°, 180°, 270° Configurable color level, brightness, sharpness, contrast, white balance, exposure control, exposure area, backlight compensation, fine tuning of behavior at low light Overlay capabilities: time, date, privacy mask, text or image		
Shutter time	2 sec to 1/25000 sec	**Applications (not incl.)**	AXIS Camera Station - Surveillance application for viewing, recording and archiving up to 25 cameras AXIS Camera Management – Video installation and management tool. Download for free at www.axis.com AXIS Camera Explorer – Basic software for viewing and manual recording See www.axis.com/partner/adp_partners.htm for more software applications via partners
Security	Multiple user access levels with password protection IP address filtering, HTTPS encryption		
Users	20 simultaneous users Unlimited number of users using multicast (MPEG-4)		
Alarm and event management	Built-in multi-window motion detection, external I/O, triggered and scheduled events with several notification options, pre- and post alarm buffer 9 MB (approx 5 min of 320 x 240 video at 4 frames per sec)	**Included Accessories**	Power supply 9 V DC, stand, connector kit, Installation Guide, CD with installation tool, software and User's Manual. MPEG-4 decoder (Windows), MPEG-4 licences (1 encoder, 1 decoder)
Connectors	Ethernet 10BaseT/100BaseTX, RJ-45 2 alarm inputs, 1 output (Terminal block), RS-485/422 half duplex port and alternative power connection D-sub for RS-232 port	**Accessories (not incl.)**	Housings for installation outdoors or in adverse indoor environments, Power over Ethernet midspans, IR Illuminators, AXIS 292 Network Video Decoder AXIS MPEG-4 Decoder 10 user license pack
Processors, memory and clock	CPU: ETRAX 100LX 32bit Video processing and compression: ARTPEC-2 RAM: 32 MB, Flash: 8 MB Battery backed up real-time clock	**Approvals**	EMC: EN55024: 1998+A1+A2, EN61000-6-1: 2001, EN61000-6-2: 2001, EN55022: 1998+A1 Class B, EN61000-3-2: 2000, EN61000-3-3: 1995+A1 FCC Part 15 Subpart B Class B by compliance with EN55022: 1998 Class B, VCCI: 2003 Class B ITE, C-tick AS/NZS 3548 and ICES-003 B by compliance with EN55022: 1998 Class B Safety: UL and CSA (Power supply), EN60950
Power	7-24 V DC, max 5.5 W 10-24 V AC, max 7.5 VA Power over Ethernet (IEEE 802.3af) with power classification according to Class 2		
Operating conditions	5 - 50 °C (41 – 122 °F) Humidity 20 - 80% RH (non-condensing)		
Temperature warning	Warning issued when temperature is below or above limits	**Dimensions (HxWxD) and weight**	49 x 88 x 186 mm (1¹⁵/₁₆" x 3¹⁵/₃₂" x 7⁵/₁₆") 550 g (19¹³/₃₂ oz) excl. power supply

Interlaced, 20 ms difference between odd and even lines

Progressive Scan, all lines are captured at the same time

Progressive scan is used instead of the interlaced method found in analog CCTV (PAL/NTSC) cameras. With progressive scan all pixels (lines) are captured at the same time, enabling moving images to be presented without distortion.

Light as perceived by the human eye ranges between wavelengths of ~400 –700 nm. Infrared light exists in nature at higher wavelengths, which can not be perceived by the human eye. IR light is filtered away in the camera by an IR cut filter in order to render a "human image", AXIS 221 can thus produce high quality b/w pictures by removing the IR cut filter when light conditions are too dark to render colors.

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