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

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Specifications

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Image Sensor	1/3" Sony Wfine progressive scan RGB CCD	**Operating conditions**	0 - 50 °C (32 – 122 °F) Humidity 20 - 80% RH (non-condensing)
Lens	Pentax TS3V310ED, F1.0 varifocal 3.0 - 8.0 mm, DC-iris, focus range: 0.3 m to infinity. CS mount	**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
Angle of view	35°-93° horizontal		
Minimum illumination	Color: 0.65 lux, F1.0 Black: 0.08 lux, F1.0	**Video access from web browser**	Camera live view, video recording to file (ASF), sequence tour capability for up to 20 Axis cameras, customizable HTML pages
Video compression	Motion JPEG MPEG-4 Part 2 (ISO/IEC 14496-2), Profiles: ASP and SP	**Minimum web browsing requirements**	Pentium III CPU 500 MHz or higher, or equivalent AMD 128 MB RAM AGP graphics card 32 MB RAM, Direct Draw Windows Vlsta, XP, 2000, DirectX 9.0 or later Internet Explorer 6.x or later For other operating systems and browsers see www.axis.com/techsup
Resolutions	16 resolutions from 640 x 480 to 160 x 120 via API, 5 selections via configuration web page		
Frame rate	Motion JPEG: Up to 45 fps at 640x480 60 fps at 480x360 or lower MPEG-4: Up to 30 fps at 640x480 60 fps at 320x240 or lower		
Video streaming	Simultaneous Motion JPEG and MPEG-4 Controllable frame rate and bandwidth Constant and variable bit rate (MPEG-4)	**System integration support**	Open API for software integration available at www.axis.com, including AXIS VAPIX API, AXIS Media Control SDK, event trigger data in video stream and access to serial port peripherals over TCP. Quality of Service (QoS) Layer 3, DiffServ Model Watchdog Embedded Linux operating system
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 s to 1/25000 s	**Supported protocols**	IPv4/v6, HTTP, HTTPS, SSL/TLS*, TCP, ICMP, SNMPv1/v2c/v3 (MIB-II), RTSP, RTP, UDP, IGMP, RTCP, SMTP, FTP, DHCP, UPnP, Bonjour, 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/)
Security	Multiple user access levels with password protection IP address filtering, HTTPS encryption IEEE 801.X network access control, user access log		
Users	20 simultaneous users Unlimited number of users using multicast (MPEG-4)		
Alarm and event management	Events triggered by video motion detection, tampering detection, temperature limits, external input or according to a schedule Image upload over FTP, email and HTTP Notification over TCP, email, HTTP and external output 9 MB of pre- and post alarm buffer	**Included accessories**	Installation Guide, CD with User's Manual, installation and management tools, demo software, mounting and connector kits, camera stand, power supply 9 V DC, single user decoder licenses, MPEG-4 decoder (Windows)
Connectors	RJ-45 for Ethernet 10BaseT/100BaseTX (PoE) Terminal block for 2 alarm inputs, 1 output, RS-485/422 half duplex port and alternative DC power connection D-sub for RS-232 port	**Video management software (not incl.)**	AXIS Camera Station - Video management software for viewing, recording and archiving up to 25 cameras See www.axis.com/partner/adp_partners.htm for more software applications via partners
Casing	Aluminium casing		
Processors, memory and clock	CPU: ETRAX 100LX Video processing and compression: ARTPEC-2 RAM: 32 MB, Flash: 8 MB Battery backed up real-time clock	**Accessories (not incl.)**	Housings for adverse indoor/outdoor environments Power over Ethernet midspans, IR Illuminators Network Video Decoder for monitors Multi-user decoder license pack
		Approvals	EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, EN 61000-6-1, EN 61000-6-2, FCC Part 15 Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR22, EN 60950 Power Supply: EN 60950, UL, CSA
Power	7-24 V DC, max 5.5 W 10-24 V AC, max 7.5 VA Power over Ethernet (IEEE 802.3af) to Class 2	**Dimensions (HxWxD) and weight**	49 x 88 x 186 mm (1.9" x 3.5" x 7.3") 550 g (19.4 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.
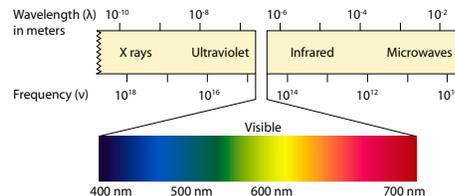
Light as perceived by the human eye ranges between wavelengths of ~400 -700 nm. Infrared light exists in nature at higher wavelengths, which can not be perceived by the human eye. IR light is filtered away in the camera by an IR cut filter in order to render a "human image", AXIS 221 can thus produce high quality b/w pictures by removing the IR cut filter when light conditions are too dark to render colors.

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