1.0 Manufacturer

Merit LILIN Ent. Co., Ltd.
No. 20, Wugong 6th Road,
Wugu District, New Taipei City 248

Manufacturer shall warrant the camera to be free from defects in material and workmanship for two years from the purchase date.

2.0 Camera Network Description

The Day & Night 1080P HD Vari-focal IR IP Camera described shall be a LILIN model number IPR424X / IPR428X or equivalent. The camera described shall be an industrial IP66 grade, high sensitivity megapixel camera using multiple-profile video streaming of H.264 and Motion JPEG technologies, built-in IR cut filter mechanism, auto color & mono switching, back light compensation, day & night applications for 24-hr surveillance, effective low light performance, and is PoE+ (IEEE 802.3at compatible) and/or can be directly powered using AC24V (±10%) or AC 100～240V (±10%).

3.0 General Specifications

3.1 The Day & Night 1080P HD Vari-focal IR IP Camera shall incorporate a 1/2.8" Progressive scan CMOS image sensor with 1984 (H) x 1105 (V) effective pixels. The network camera shall be able to produce images in 1080P, 720P, D1 or CIF resolution. The camera shall have a minimum light requirement of 0.02 Lux at F1.4 in color mode (Low Light Mode) or 0 lux if IR on. The video output level shall be CVBS 1.0Vp-p (75Ω, BNC connector). The audio input and output level shall be mono, 1.4Vp-p, 50K Ω, Terminal connector.

3.2 The camera shall support 2-way audio function.

3.3 The camera shall produce 30 frames per second at 1080P resolution with H.264 video compression or produce 15 frames per second at 1080P resolution with Motion JPEG video compression.

3.4 The camera shall provide three streaming at same time for various Internet or Intranet applications.

3.5 The camera shall compliant with IP66 rating.

3.6 The camera shall provide Infrared LED for ultra low lux night vision.

3.7 The camera's projection beam of infrared LED shall reach 55M with IR wavelength at 850nm.

3.8 The camera shall have at least 256MB of RAM.

3.9 The camera shall provide a TCP/IP protocol video output via a RJ-45 Ethernet connection.

3.10 The camera shall provide composite video BNC output.

3.11 The camera shall provide Micro SD /SDHC for circular local recording (card is not included).

3.12 User and Administrator password protection levels are provided.

3.13 The camera shall provide two sets of sensors or video quality for day and night that the setting can be programmed based on individual schedule(s).

3.14 The camera is able to specify its shutter speed for min and max range for various environments. (1/30(25)s ～ 1/8000s)

3.15 The camera shall provide 3D noise reduction feature.

3.16 The camera shall provide WDR and BLC features.

3.17 The camera shall provide privacy mask feature.

3.18 The camera shall provide motion, audio, and network detection features.
3.19 The camera shall provide PoE+ (IEEE 802.3at compatible) input.
3.20 The camera shall provide video mirror and flip features.
3.21 A recessed mechanical rest button shall be provided to return the camera to factory default settings.

4.0 Camera Networking Requirements

4.1 The camera shall incorporate a built-in web server.
4.2 The camera shall provide integrated support for IPv4, IPv6, TCP, UDP, HTTP, SMTP, NTP, DDNS, UPnP, FTP, ARP, DHCP, PPPoE, DNS, RTSP, RTCP, Telnet, ICMP, IGMP, ONVIF Profile S, SNMP, SIP, Bonjour.
4.3 The camera shall provide FTP services for sending JPEG snapshots based on scheduling and/or continuously sent with various time pattern, prefix, and postfix for JPEG file names that it can achieve better FTP system integration.
4.4 The camera shall provide email service for sending JPEG snapshots for at least 5 different recipients.
4.5 No unique or proprietary client software shall be required for viewing or controlling the camera.
4.6 The camera shall be user configurable and the administrator may functionally or aesthetically modify the camera's web pages.
4.7 The camera shall provide 3G mobile remote live monitoring capability – Alarm PushVideo on smartphone devices (LILINViewer).
4.8 Multiple cameras installed shall be connected and managed by Center Management Software (Navigator software). Cameras can be grouped in the Navigator software. Camera groupings in Navigator software can be assigned for certain user(s) for user management purpose.
4.9 The camera shall provide IP filter to isolate a particular IP address for safety and related possible conditions.
4.10 The camera shall provide NTP (Network Time Protocol) feature so that the camera is able to connect to NTP network.
4.11 The camera shall provide OSD (on-screen display) feature which includes time display and device name display.
4.12 The Web server of the camera shall provide system log information for administrator(s) to view videos and operation details.
4.13 The camera shall provide alarm event notification via external alarm outputs on detections on audio, motion, and network lost.
4.14 The camera shall have Micro SD /SDHC card video playback function so that users can store designated videos into the Micro SD /SDHC card without using an extra media player to support.
4.15 The camera shall provide various alarm event outputs: i.e. GPIO (general purpose input/output), FTP (file transfer protocol) and email notification services to notify the users.

The camera shall not exceed a dimension of body: 124mm (W) x 113mm (H) x 310mm (D), bracket: 211.5mm (L) and weigh no more than 2,200g. Power requirement for the network camera shall be 17W (PoE+, 20W). The operating temperature for video camera shall be -40°C – +50°C (-40°F – 122°F). The camera manufacturer shall be ISO 9001 certified and Camera shall comply with CE.

5.0 Minimum Performance Specifications

Day & Night 1080P HD Vari-focal IR IP Camera				
Model			IPR424ESX3.6	IPR428ESX3.6
Lens	Focal length		3.3 – 12 mm	
	Iris		F1.4	
	Angle of view	H	79.3° – 29.8°	
		V	59.4° – 22.4°	
		D	99° – 37.3°	
Pick up element			1/2.8" CMOS image sensor	
Effective pixels			1984 (H) x 1105 (V) = 2,192,320 (pixel)	
Scanning system			Progressive scan	
Infrared cut filter			Auto / schedule / day (color) / night (mono)	
Min. illumination			0.02 Lux at F1.4 (Low Light Mode) / 0 Lux with IR LED ON	
White balance			Auto / tungsten / indoor / fluorescents1 / fluorescents2 / outdoor1 / outdoor2	
Back light compensation			Off / on	
Electronic shutter			1/30(1/25)s – 1/8000s	
Sense up			Off / 1 frame / 2 frames / 3 frames / 7 frames	
Sense up +			Yes	
Auto gain control			36 dB variable gain	
3D Noise Reduction			Off / 1 – 32 selectable	
2D WDR			Off / Auto / x2 / x3 / x4	
Privacy masking			Off / on (4 zones)	
Image effects			Brightness, Contrast, Hue, Saturation, Sharpness, Mirror, Flip	
Live Video output			CVBS 1.0Vp-p, 75 ohm, BNC connector	
Audio in / output			Mono, 1.4 Vp-p , 50 KΩ , terminal connector	
IP rating			IP66	
Window			Ø 78 heat resistant glass	
Infrared LED	Peak wavelength		850nm	
	Beam spread		30°	
	Radiant distance		55M	
Operating temperature			-40°C – +50°C (-40°F – 122°F)	
Dimension			Body : 124mm(W) x 113mm(H) x 310mm(D) , Bracket : 211.5mm(L)	
Weight			2200g	
Power supply			AC24V (±10%)	AC100 – 240V (±10%)
			PoE+ (IEEE 802.3at compliant)	

Power consumption		17W (PoE+, 20W)
Network		
Video compression		H.264 , Motion JPEG
Resolution		1080P(1920 x 1080), 720P(1280 x 720), D1(720 x 480), CIF(352 x 240)
Multiple profile	Profile #1	H.264 : up to 30 FPS @ 1920 x 1080, MJPEG : up to 30 FPS @ 720 x 480
	Profile #2	H.264 : up to 30 FPS @ 1280 x 720, MJPEG : up to 30 FPS @ 352 x 240
	Profile #3	H.264 : up to 30 FPS @ 1920 x 1080, MJPEG : up to 30 FPS @ 1280 x 720
	Profile #4	H.264 : up to 30 FPS @ 720 x 480, MJPEG : up to 15 FPS @ 1920 x 1080
Video streaming		RTP/HTTP, RTP/TCP, RTP/UDP, Multicast
Video bitrate		128Kbps – 8Mbps
		Frame rate and bit rate controllable on-the-fly
		VBR / CBR / GOP supported
Security		Base64 HTTP encryption
		Multiple user access levels with password protection
		10 user accounts available
Users		8 simultaneous users
ePTZ & digital zoom		Yes, ROI is supported
OSD		Text overlay for date, time, and camera name
Alarm function		Alarm / motion / tampering / face / alarm detection triggering recording into SD card
		Image upload over FTP and E-mail by face / tampering / audio / motion detection
CPU, memory		Embedded SoC ARM11, 528MHz, 256MB DDR2, 256MB flash memory
Maintenance		Firmware update via HTTP
		Firmware available at web site
Network interface		10Mbps / 100Mbps Base-T, RJ-45
PC requirement		OS : Windows 2000, Windows XP, Windows Vista, Windows 7, Windows 8
		Browser : Windows Internet Explorer 6.0 or above
		CPU : intel pentium 4 1.8GHz or above
		RAM : 1GB or above, independent display card
Network protocols		IPv4, IPv6, TCP, UDP, HTTP, SMTP, NTP, DDNS, UPnP, FTP, ARP, DHCP, PPPoE, DNS, RTSP, RTCP, Telnet, ICMP, IGMP, ONVIF Profile S, SNMP, SIP, Bonjour
Mobile phone		iPhone, iPad, and Android support
System integration		ONVIF & LILIN HTTP API
Central management system		NAV 1.0 support
Video display		LILIN Universal ActiveX & LILIN Java Applet
OS		Embedded Linux 2.6.32
Two-way audio		G.711 / PCM
SD card recording		Support Micro SD/SDHC card for circular recording (card is not included)

Alarm input / output	Digital 1 input (TTL, +3 – 5VDC) / 1 Output (MOS Relay contact N.O., Load max. 40VDC/300mA)

*Please submit ISO 9001, CE, IP66 certificates.

*This specification is intended for use by the design/construction professional and any user of LILIN products to assist in developing project specifications for security and video surveillance systems.