

1.0 Manufacturer

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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 5MP 360 ° Panorama Dome IP Camera described shall be a LILIN model number FD2452ES or equivalent. The camera described shall be an 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 802.3af compatible) and/or can be directly powered using DC12V, 8W.

3.0 General Specifications

- 3.1 The Day & Night 5MP 360 ° Panorama Dome IP Camera shall incorporate a 1/2.5" Progressive scan CMOS sensor with 1920 (H) x 1080 (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 1.5 lux at F2.8 in color mode (Low Light Mode). The video output level shall be CVBS 1.0Vp-p, 75Ω, and BNC connector. The audio input and output level shall be mono, 1.4Vp-p, 50 KΩ, 3.5mm phone jack.
- 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 30 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.
- 3.8 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).
- 3.15 The camera shall provide 3D noise reduction feature.
- 3.16 The camera shall provide WDR feature.
- 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 802.3af compatible) input.
- 3.21 A recessed mechanical reset button shall be provided to return the camera to factory default settings.

- 3.22 The camera shall provide angle of view in 180 degrees & 360 degrees.
- 3.23 The camera shall support digital pan, tilt, and zoom.

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 IP, TCP, UDP, HTTP, SMTP, NTP, DDNS, UPnP, FTP, ARP, DHCP, PPPoE, DNS, RTCP, RTSP, Telnet, ICMP, IGMP, SNMP V3 and ONIVF protocols.
- 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.
- 4.8 Multiple cameras installed shall be connected and managed by Center Management Software (CMX Software). Cameras can be grouped in the CMX Software. Camera groupings in CMX 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: Ø145mm x 60mm and weigh no more than 600g. Power requirement for the network camera shall be DC12V, 8W / PoE, 9.2W. The operating temperature for video camera shall be -25°C ~ +50°C (-13°F ~ 122°F). The camera manufacturer shall be ISO 9001 certified and Camera shall comply with CE.

5.0 Minimum Performance Specifications

Day & Night 5MP 360° Panorama Dome IP Camera		
Model		FD2452ES
Lens	Focal Length	1.05mm
	Iris	F2.8
	Angle of View	185° (H), 185° (V), 185° (D)
Pick Up Element		1/2.5" CMOS image sensor
Effective Pixels		2592 (H) x 1944 (V) = 5,038,848
Chip Size		5.70mm (H) x 4.28mm (V)
Scanning System		Progressive Scan
Infrared Cut Filter		Auto / Schedule / Day (Color) / Night (Mono)
Min. Illumination		0.7 Lux at F2.8 (Low Light Mode)
White Balance		Auto / Fluorescents 1 / Outdoor 1 / Outdoor 2
Shutter Range		Auto / 1 / 2 / 3
Auto Gain Control		Auto
3D Noise Reduction		Off / 1 ~ 32 selectable
2D WDR		Off / x1 / x2 / x3 / x4 / x5
Privacy Masking		Off / On (4 zones)
Image Effects		Brightness, Contrast, Saturation, Sharpness
Screen Mode		Full Panorama / Wide Panorama / Around Panorama / 4 Window / 1 Window
Live Video Output		CVBS 1.0Vp-p, 75ohm, BNC connector
Audio In / Output		Mono, 1.4Vp-p, 50KΩ, 3.5mm phone jack
Operating Temperature		-25°C ~ +50°C (-13°F ~ 122°F)
Dimension		Ø145 x 60mm
Weight		600g
Power Supply		DC12V±10% / PoE (IEEE 802.3af compliant)
Power Consumption		DC12V, 8W / PoE, 9.2W
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 30FPS @ 1920 x 1080, MJPEG: up to 30FPS @ 720 x 480
	Profile #2	H.264: up to 30FPS @ 1280 x 720, MKPEG: up to 30FPS @ 352 x 240
	Profile #3	H.264: up to 30FPS @ 1920 x 1080, MJPEG: up to 30FPS @ 1280 x 720
	Profile #4	H.264: up to 30FPS @ 720 x 480, MJPEG: up to 15FPS @ 1920 x 1080
Video Streaming		RTP / HTTP, RTP / TCP, RTP / UDP, Multicast
Video Bitrate		128Kbps ~ 10Mbps
		Frame rate and bit rate controllable on-the-fly
		VBR / CBR / GOP supported
Security		Base64 HTTP encryption

	Multiple user access levels with password protection
	IP filter with access log
	10 user accounts available
Users	8 simultaneous users
ePTZ	Yes, controllable
OSD	Text overlay for date, time, and camera name
Alarm Function	Alarm / motion detection triggering recording into SD card
	Image upload over FTP and email by audio / motion detection
CPU, Memory	Embedded SoC ARM11, 528MHz, 256MB DDR2, 256MB flash memory
Maintenance	Firmware update via HTTP
	Firmware available at Website
Network Interface	10Mbps / 100Mbps Base-T, RJ-45
PC Requirement	OS: Windows 2000, Windows XP, Windows Vista, Windows 7
	Browser: Windows Internet Explorer 6, 7, 8
	CPU: Intel Pentium 4 1.8GHz or above
	RAM: 1GB or above, Independent Display Card
Network Protocols	IP, TCP, UDP, HTTP, SMTP, NTP, DDNS, UPnP, FTP, ARP, DHCP, PPPoE, DNS, RTSP, RTCP, Telnet, ICMP, IGMP, ONVIF, SNMP V3
Mobile Phone and PDA	iPhone, iPad, and Android support
System Integration	ONVIF & LILIN HTTP API
CMX	CMX HD 3.6 support or equivalent
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 or record only there is incidents (triggered by alarm feature).
Alarm Input / Output	Digital 1 input (TTL, +3~5V) / 1 Output (N.O.)

*Please submit ISO 9001, CE 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.