

## 1.0 Manufacturer

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## 2.0 Warranty

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

## 3.0 General Specifications

The network camera shall be LILIN Z5R8922X3 camera.

### Video Performance

- A. The camera shall have a minimum light requirement of 0.01 Lux at F1.8 in color mode, 0.001 Lux at F1.8 in B/W mode or 0 Lux if IR on.

### Power

- A. Power requirement for the network camera shall be DC12V, 7.7W or PoE, 10.0W.
- B. The camera shall provide power consumption DC12V at 10.0W

### Sensor

- A. The camera shall use a progressive scan 1/2.7" CMOS image sensor.
- B. The camera shall produce a maximum resolution of 1932 (H) × 1092 (V) = 2,109,744 (pixels).

### Certifications

- A. The camera shall be compliant with CE EMI CLASS A certifications.
- B. The camera shall be compliant with FCC EMI CLASS A certifications.
- C. The camera shall be rated to IP68 standard against water and dust ingress.
- D. The camera shall be rated to IK10 vandal resistant rating.

### PC Requirements

- A. The PC CPU requirement shall be Intel® Core™ i7 or higher grade for the camera.
- B. The camera shall support Windows 7 64 bit, Windows 8 64 bit, Windows 10 64 bit.
- C. The PC memory RAM shall be at least 8GB or above, dedicated graphics card for the camera.

### Mechanical

- A. The camera shall not exceed a dimension of 74(W) × 69(H) × 206(D) mm approximately.
- B. The camera shall not exceed a weight of 575g approximately.
- C. The camera window shall be at least Ø61 Heat Resistant Glass level.

### Alarm Input / Output

- A. The camera shall support 1 digital input (TTL, +3 – 5VDC) terminal block.
- B. The camera shall support MOS relay contact N.O., load max. 40VDC, 450mW/300mA, 450mW, terminal block.

### Video Streaming

- A. Video streaming format in order to provide better quality and compression rate shall support H.265 / HEVC main profile, H.264 main profile, Motion JPEG.
- B. The camera shall provide RTSP/TCP, RTSP/UDP.
- C. The camera shall provide 3 streaming with combine compression and resolution at same time for various Internet or Intranet applications.
- D. The camera shall support VBR, CBR, GOP adjustable, fixed bitrate range encoding mode.
- E. The camera shall provide 3 resolution in browser for user easy to change resolution.
- F. The camera shall support RTSP unicast streams and multicast streams.

### Network Security

- A. The camera shall support up to 7 users for accessing the streaming.
- B. The camera shall support multiple user access levels with password protection.
- C. The camera shall support the system log to store the IP address.

- D. The camera shall support the config log for all related operation setting.
- E. The camera shall support the alarm log for all related alarm events.
- F. The camera shall support the user log in order track each user accessing date and time.
- G. The camera shall support the record log for all storage status information.
- H. The camera shall support the storage log for all events related to recording in the built-in SD card.
- I. The camera shall support the network log for all network issue information.
- J. The camera shall display the number of currently connected devices to video, to know the device connection status.
- K. The camera web interface shall display the last time the camera boot up, to know the device connection status.

**Authentication**

- A. The camera shall support base64 HTTP encryption, digest HTTP authentication, RTSP authentication, DDNS via HTTPS.
- B. The camera shall support HTTPS encryption of data. It shall support self-import of digital signatures, and change HTTPS port.
- C. The camera shall support login account digest access authentication for avoiding passwords being extracted improving the network security.
- D. The camera shall require a username and password for video transmission over RTSP streaming.

**Integration**

- A. The camera shall be able to be accessed by the iOS mobile device and Android mobile device
- B. The camera shall conform to the ONVIF profile S standard and provide official documentation.
- C. The camera shall support LILIN Navigator Enterprise 2.0.
- D. The camera shall support 3rd party VMS through LILIN HTTP API.

**SD Card Recording**

- A. The camera shall support micro SD, SDHC, SDXC.
- B. The camera shall support circular recording.
- C. The camera shall support SD card size up to 128 GB.

**Web Browser**

- A. The camera shall support IE 9, IE 10, IE 11, Chrome, Firefox, Opera, Safari for Mac OS.

**Alarm Events**

- A. The camera alarm event shall support motion detection, alarm detection, network lost detection, global counter, virtual input, metadata.
- B. The camera disconnected network detection shall support automatic related alarm triggering and recording to SD card when there is no streaming output, no matter how many network devices are connected in a series.
- C. The camera shall provide at least 25 sets of customizable HTTP POST commands after multiple event triggering for system integration.

**Alarm Notification**

- A. The camera shall provide alarm notification with SMTP, FTP, HTTP post, SAMBA, Alarm Output, SD card, Push Service notification.
- B. The camera shall support FTP setting a timer to automatically upload photo for time-lapse photography purpose.

**Environmental**

- A. The camera shall be operated in following temperature range: -30°C – +50°C / -22°F – 122°F.

**Lens**

- A. The camera shall support fixed lens at 2.8 – 12 mm.
- B. The camera shall support fixed IRIS at F 1.8(W) - F 3.3(T).
- C. The camera shall support horizontal angle of view at 104.0° (W) – 36.6° (T).
- D. The camera shall support vertical angle of view at 54.7° (W) – 20.4° (T).
- E. The camera shall support diameter angle of view at 126.1° (W) – 41.7° (T).

**Infrared LED**

- A. The camera shall support IR distance at 30M.
- B. The camera shall support peak wavelength at 850nm.
- C. The camera shall support beam spread at 60°.

**Video Resolutions**

- A. The camera shall be able to produce images in 1920x1080 (2MP), 1280x960 (1.3MP), 1280x720 (1MP), 720x480 (D1), 720x576 (D1), 640x480 (VGA), 352x256 (CIF)

**Maximum Frame Rate**

- A. The maximum frame rate under 60Hz is up to 30FPS @ 1920 x 1080 in normal mode.
- B. The maximum frame rate under 50Hz is up to 25FPS @ 1920 x 1080 in normal mode.

**IR-cut Filter**

- A. The IR cut filter shall be able to support color (day), monochrome (night), auto, schedule.

**Scanning System**

- A. The camera shall use a progressive scan image sensor.

**Picture Setting**

- A. The camera shall provide brightness, contrast, hue, saturation and sharpness.

**Picture Effects**

- A. The camera shall provide mirror, flip, rotation features.

**White Balance**

- A. The camera shall provide the white balance settings including: Auto and Manual(adjustable).

**Video Quality**

- A. The camera is able to specify its shutter speed for min and max range 1/30(1/25)s – 1/20000s for various environments.
- B. The camera shall support back light compensation area selection, partially brighter areas can be masked, compensating for the dark areas.
- C. The camera shall support 2D WDR, to reduce the brightness of the overexposed image.
- D. The camera shall support HDR at 70dB.
- E. The camera shall support 3D noise reduction.
- F. The camera shall support privacy mask up to 4 zones and mask configurable.
- G. The camera shall provide the sense up settings including: off, x2, x4.
- H. The camera shall support Sense up+.
- I. The camera shall support auto gain control up to 42dB.
- J. The S/N ratio shall be more than 48dB (AGC off).
- K. The camera shall support day and night switch selectable including day mode, night mode, auto mode, time schedule.
- L. The camera shall support video output aspect ratio changed from 16:9 to 9:16 when the image flipped 90 degrees after rotate is selected.
- M. The camera OSD shall support foreground and background color change, and transparency adjustment.
- N. The camera OSD shall support being drag-and-drop to the specified location in web interface through a mouse.
- O. The camera shall support adjustable position in OSD display for date, time, camera name.
- P. The camera OSD color shall be changeable and transparency adjustable, for avoiding OSD to block the image. This function is mandatory.

**Network**

- A. The camera shall support 10Base-T, 100Base-TX.
- B. The camera shall support LILIN API (CGI).
- C. The camera shall support to manually change the RTSP URL and Port for system compatibility.
- D. The camera shall support to manually change the RTCP for system compatibility.

**CPU**

- A. The camera shall support up to SoC ARM Cortex-A7 Single Core 800MHz.
- B. The camera shall support up to Embedded 128MB DDR3, 128MB flash memory.

**Video Display**

- A. The camera shall support LILIN Universal Active X.

**OS**

- A. The OS of the camera should be embedded Linux 3.10.

**Protocols**

- A. The camera shall support the following network protocols: IPv4, TCP, UDP, HTTP, HTTPS, SMTP, NTP, DDNS, FTP, ARP, DHCP, DNS, RTSP, RTCP, Telnet, ICMP, IGMP, ONVIF Profile S and SSL/TLS.

**Languages**

- A. The camera shall support the following languages: English, Traditional Chinese, Simplified Chinese, Spanish, Italian, Turkish, Russian, Korean, French, Arabic, Hungarian, Japanese.

**4.0 Installation**

- A. All equipment shall be tested and configured based on the manufacturer guide line prior to installation.
- B. All the products shall be updated for the latest firmware.
- C. All the products shall be changed for the default username and password prior to installation.

**5.0 Environmental Green Policy**

- A. The specified camera shall be manufactured in accordance with ISO 14001.
- B. The specified camera shall be compliant with the EU directives RoHS and WEEE.
- C. The specified camera shall be compliant with the EU regulation REACH.

END OF SECTION