LILIN
iMEGAPRO

*20X/30X PoE IR FAST DOME IP Camera*

# PSR5024EX20, PSR5024EX30

## Instruction Manual

# IMPORTANT SAFEGUARDS

CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION
TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE FRONT OR BACK COVER.
NO USER SERVICEABLE PARTS INSIDE.
FOR MAINTENANCE, CONTACT QUALIFIED
SERVICE PERSONNEL.

## SYMBOL DEFINITION

The lightning within a triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.

The exclamation point within a triangle is intended to alert the user to the presence of important operating and maintenance instructions in this guide.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED
WITH AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING
TO THE INSTRUCTIONS

# WARNINGS & CAUTIONS

Please read the manual before attempting installation or operation

1. Do not use any chemical detergent to clean the machine surface; use a damp cotton cloth only. Regularly clean the dome cover to ensure focusing accuracy.
2. Install the Fast Dome in a dry area. Water and high humidity may damage internal parts. External housing should be used for outdoor installation.
3. Use parts supplied by the manufacturer only; use of unqualified part will void the warranty.
4. Avoid installing the equipment on an unstable surface. Make sure the installation location is solid and stable. Falling equipment may injure personnel and damage the equipment.
5. Do not install the equipment near any flammable gas. Violation may cause fire or injury.
6. Avoid running video and signal cables through or passing interference sources such as electromagnetic wave, broadcast station, power generator, elevator motor, or high voltage are, etc. Interference may cause the equipment not to function properly.
7. Make sure the power cable is properly connected. Loosened power cables may cause serious short circuit or fire.
8. Make sure all cables are properly connected. Do not place any object on the cables. Replace the cable if damaged. Violation may cause short circuit, fire, and injury.
9. Make sure all wires and cables are properly grounded to avoid damage caused by lightning.
10. Do not put any foreign objects inside the equipment and do not spray any liquid on the equipment to avoid short circuit and subsequent damage.
11. Do not touch power connection with wet hands to avoid short circuit or electric shock.
12. Do not apply external force on the equipment. Violation may cause damage.
13. Do not expose the equipment directly to sunlight. Violation may cause color fading or damage.
14. Do not install the equipment in high or low temperature environment to avoid damage. The operating temperature is between -40°C - +50°C.
15. The Fast Dome consists of highly sensitive electronic parts inside. Do not try to repair the equipment. Only a qualified technician may disassemble and repair the equipment. Shut off the power before disassembling the equipment and do not power it on unless the casing is completely closed.
16. Turn off the power immediately and contact the technician when the following occurs:
    A. Damage on power cable or plug.
    B. Water leak into the equipment.
    C. Fast Dome does not function normally.
    D. Equipment falling on the ground or damage on external casing.

## Introduction

LILIN PSR5024EX20 / PSR5024EX30 is a day&night 2M resolution color high speed dome camera, which supports HD/Full HD resolution and digital signal processing (DSP) technology. The camera features 20/30X optical lens, digital zoom, auto focus/iris control, IR cut, auto gain control, wide dynamic range (WDR), back-light compensation, digital noise reduction, and electronic stabilization.

PSR5024EX20/30 is only 198mm in diameter. Within the adjustable range, this camera can either move smoothly or in high speed. The camera's moving speed ranges from 0.1°/s to 300°/s. The continuous 360 pan capability is free from the restriction of direction. Every PSR5024 camera supports 256 preset positions, which can be automatically monitored if set to the auto-scan mode.

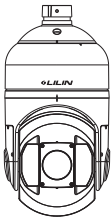
PSR5024EX20/30 supports 4 sets of alarm-input. In a matter of seconds, your dome camera can be targeted to any preset position. The alarm inputs correspond to the preset positions for even more secure perimeter monitoring.

The new PSR5024EX20/30 camera has a compact and streamlined design. With the comprehensive functions that deliver maximum ease of use, the PSR5024 series is your ideal surveillance camera.

The cutting-edge H.264 AVC encoding technology delivers better compression rate and superior video quality at 56 Kbps to 3 Mbps bit rate. The dual streaming design supports both MJPEG and H.264 AVC formats to allow video streaming at low bandwidth (Internet) and high bandwidth (LAN) for quality optimization.

## Package Contents

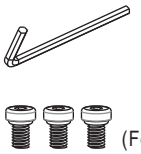
1. Dome camera




2. 350mm safety strap
+M3x8L machine bolts with washers (x2)

(For safety strap)

3. 5mm hex key
+M6x10L hex machine bolts (x3)

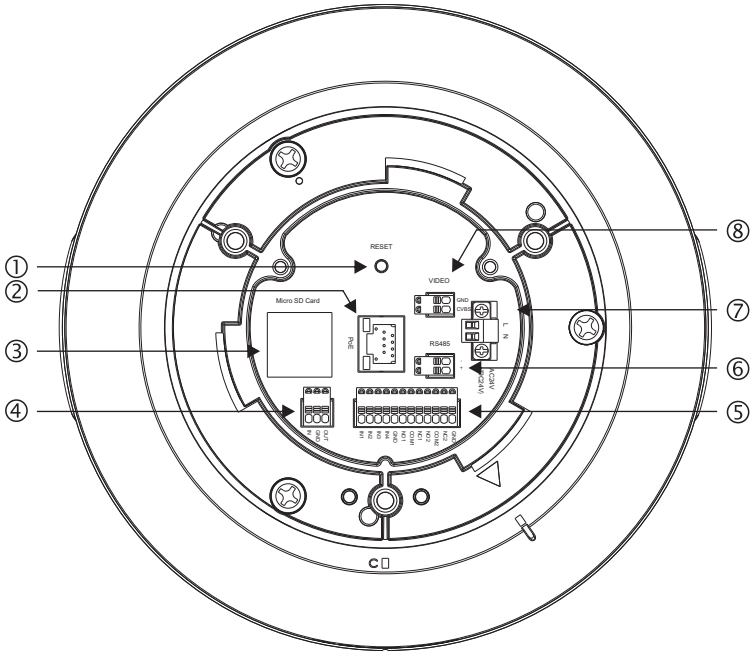


(For camera quick release adaptor)

4. Installation guide

5. Software CD

## Connector Hub




① Reset button

② RJ-45 network connector (PoE supported)

LAN: 10/100Mbps

Recommended cable: CAT5

③ Micro SD card slot: supports Micro SD and SDHC card

④ Audio In

Audio signal: 1.4Vp-p(1 Vrms)

Recommended cable: shielded signal cable

⑤ Alarm In/Out

Every camera provides 4 external alarm inputs and 2 alarm outputs

Voltage for alarm inputs: 5.6Vmax; alarm output: 1A 24VDC

Recommended cable: UL 26AWG 80°C 300V

UL 24AWG 80°C 300V

⑥ RS-485 connector

⑦ Power cable (AC24V)

Recommended cable:

| Copper Wire (AWG) | | #24 (0.22mm$^2$) | #22 (0.33mm$^2$) | #20 (0.52mm$^2$) | #18 (0.83mm$^2$) |
|---|---|---|---|---|---|
| Cable Length (approx.) | (m) | 20 | 30 | 45 | 75 |
| | (ft) | 65 | 100 | 160 | 260 |

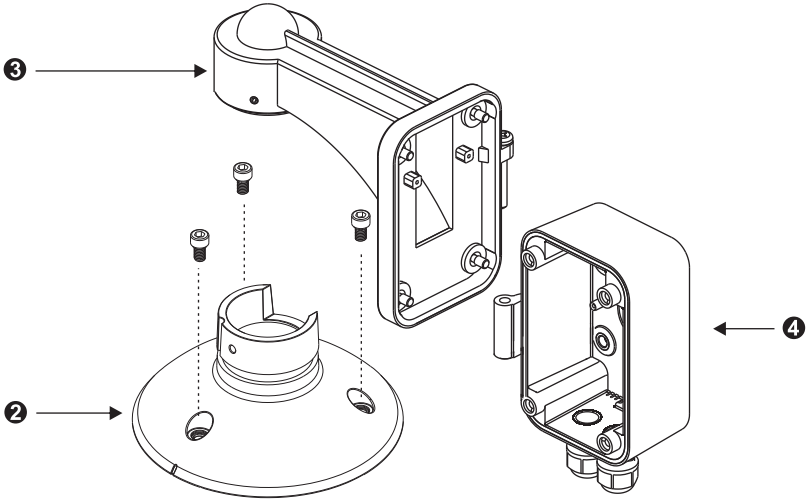
⑧ Video Out

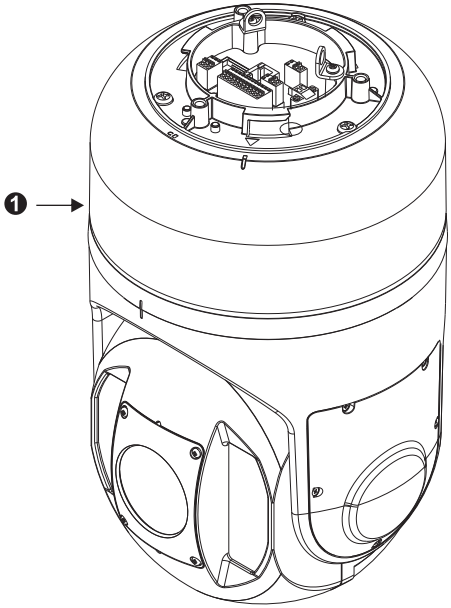
Video signal output: CVBS 1.0Vp-p 75Ω BNC

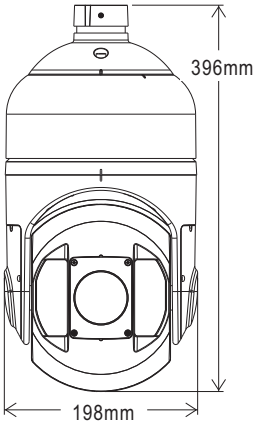
Recommended cable: CABLE 5C2V

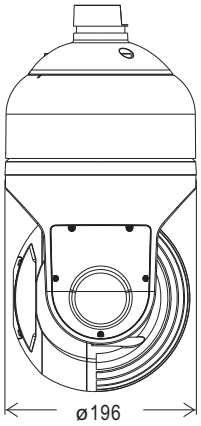
# Installation

## Structural Diagram



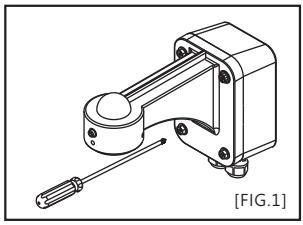



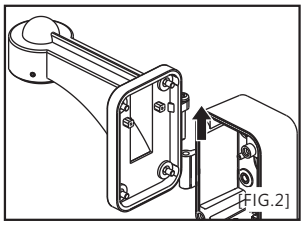




❶ Camera body
❷ Camera quick release adaptor
❸ Camera bracket
❹ Camera bracket base

Step 1 Remove the bracket from the base

Loosen the four bolts from the base (FIG.1) and push the hinge upwards to separate it from the base (FIG.2).

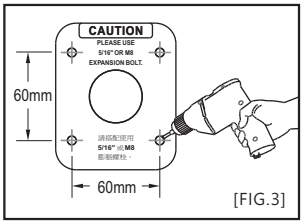

[FIG.1]


[FIG.2]

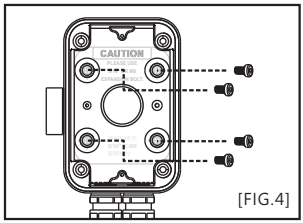
Step 2 Secure the bracket base to the wall

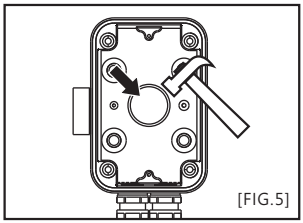
Attach the installation sticker to the wall and drill four holes according to the instructions (FIG.3). Tighten four bolts to secure the base to the wall (FIG. 4). To use the central hole on the base, first hammer the lid off (FIG.5).

Note The bolts are not included in the package.



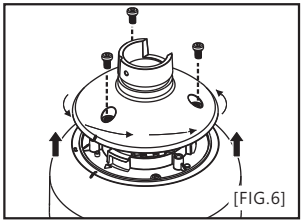
[FIG.3]

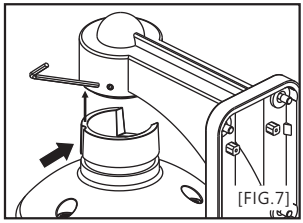

[FIG.4]

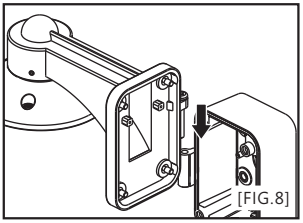

[FIG.5]

Step 3 Attach the quick release adaptor to the bracket

First remove the quick release adaptor from the camera body. Align the adaptor with the bracket before tightening the bracket bolts (FIG. 6 & FIG.7). Then slide the adaptor and bracket together down the hinge to connect to the base (FIG.8). Note: The three bolts on the adaptor must be loosened first to remove the adaptor.


[FIG.6]

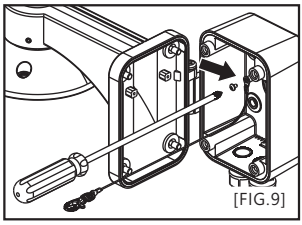

[FIG.7]

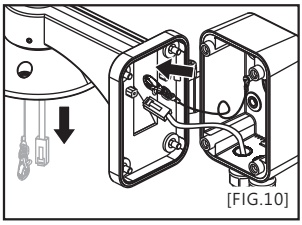

[FIG.8]

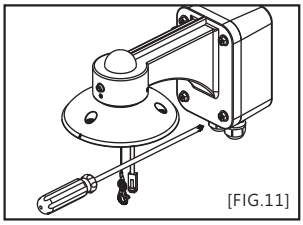
Step 4 Slip the control wires through the bracket

Properly secure the safety strap to the bracket, and slip the safety strap, RJ-45 cable, and AC24V power connector through the bracket (FIG.9 & FIG.10). Secure the bracket to the base (FIG.11)

Note: The AC24V power connector is not needed to be connected when a PoE device is used.

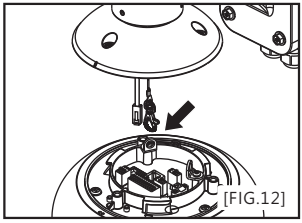

[FIG.9]

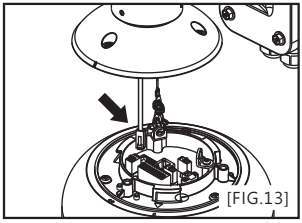

[FIG.10]

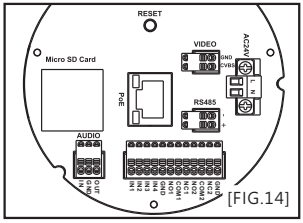

[FIG.11]

Step 5 Connect the control wires

To prevent the camera from falling, you should first secure the safety strap to the camera body (FIG.12). Next, connect the RJ-45 cable and AC24V power connector to the hub on the body (FIG.13 & FIG.14).


[FIG.12]

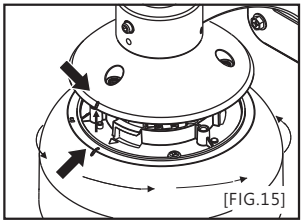

[FIG.13]

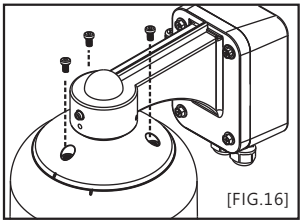


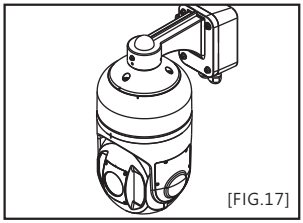
[FIG.14]

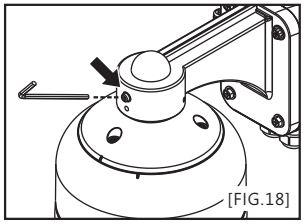
Step 6 Install the camera body

Allign markings on the quick release adaptor and the camera body. Twist the camera body clockwise into the adaptor (FIG.15). Tighten the three bolts on the adaptor (FIG.16) to secure the camera and finish the installation (FIG.17).


[FIG.15]


[FIG.16]


[FIG.17]


[FIG.18]

Note: After completing the installation of the dome camera, lock the safety screw on the camera bracket to avoid falling (FIG.18).

## Low Temperature Power-Up

Camera may perform abnormally at low temperature. Hence, follow the below procedure when the camera is off due to power outage or other issues and needs to be restarted under -40°C to -5°C.

**Low temperature power-up procedure**

Power up and wait for the heater to warm up for 15 minutes before you operate the camera.

# Specifications

| 20X/30X D/N 1080P 60FPS FULL HD FAST DOME IP CAMERA | | | |
|---|---|---|---|
| **General** | | | |
| Model | | PSR5024EX20 | PSR5024EX30 |
| Power Supply & Power Consumption | | AC24V±10%,80W / DC24V,80W / PoE++,80W | |
| Image Pick-up Device | | 1/2.8" Type CMOS Sensor (Sony IMX140) | |
| Effective Pixels | | 1944(H) x 1224(V) = 2,379,456 (pixels) | |
| Total Number of Pixels | | 1952(H) x 1236(V) = 2,412,672 (pixels) | |
| Scanning System | | Progressive Scan | |
| Video Output | | CVBS 1.0Vp-p/ 75ΩBNC | |
| Minimum Illumination | Color | 0.5 lux (1/30 sec, F1.6(Wide), 50IRE, AGC-Gain: 30dB ICR-OFF) | |
| | Color DSS | 0.1 lux (1/8 sec, F1.6(Wide), 50IRE, AGC-Gain: 30dB ICR-OFF) | |
| | Mono | 0.2 lux (1/30 sec, F1.6(Wide), 50IRE, AGC-Gain: 30dB ICR-ON) | |
| | Mono DSS | 0.01 lux (1/8 sec, F1.6(Wide), 50IRE, AGC-Gain: 30dB ICR-ON) | |
| | IR On | 0 lux | |
| Casing | | Weather-proof IP66, Vandal-proof IK10 | |
| Safety Certifications | | CE, FCC, UL | |
| Operating Temperature | | -40°C ~ +50°C (-40°F ~ 122°F) | |
| Operating Humidity | | 0% ~ 90% | |
| Dimensions | | 395mm(H) x 198mm(D) | |
| Weight | | 6000 g | |
| **Pan & Tilt** | | | |
| Pan Range | | 360° Endless | |
| Pan Mode | | Manual, Auto, Manual Position, Sequential Position | |
| Pan Speed | | Manual Approx. 0.1°/s ~ 120°/s 8 Steps, Preset Approx. 1°/s ~ 300°/s, Alarm Trigger Speed 300°/s | |
| Tilt Range | | -30° ~ +210° | |
| Tilt Mode | | Manual, Auto, Manual Position, Sequential Position | |
| Tilt Speed | | Manual Approx. 0.1°/s ~ 120°/s 8 Steps, Preset Approx. 1°/s ~ 300°/s, Alarm Trigger Speed 300°/s | |
| **Lens** | | | |
| Zoom Ratio | | 20X Optical Zoom | 30X Optical Zoom |
| Focal Length | | 4.7 mm (WIDE) to 94.0 mm(TELE) | 4.3 mm (WIDE) to 129.0 mm(TELE) |
| F-number | | 1 : 1.6 (Wide) ~ 3.5 (Tele) | 1 : 1.6 (Wide) ~ 4.7 (Tele) |
| Minimum Object Distance | | 30 cm (WIDE end), 1.5M (TELE end) | 10 cm (WIDE end), 1.5M (TELE end) |
| Iris range | | F1.6 ~ 32, Close | F1.6 ~ 32, Close |
| Field of View | | Approx. 59.94°( H ) 36.16°( V ) (WIDE end), approx. 3.30°( H ) 1.87°( V ) (TELE end), (1080p mode) | Approx. 64.45°( H ) 39.27°( V ) (WIDE end), approx. 2.41°( H ) 1.36°( V ) (TELE end), (1080p mode) |
| **Main Function** | | | |
| Control Function | | Pan and Tilt/ Zoom and Focus/ Iris and ICR/ 256 Preset Position/ Home Position | |
| Digital Zoom Ratio | | x16 | |
| Zoom Speed | | 0 ~ 7 Selectable[ Fast : Approx. 6.0 Second ( Tele to Wide ) in Manual Mode ] | |
| Focus Speed | | 0 ~ 7 Selectable [ Fast : Approx. 6.0 Second ( Far to Near ) in Manual Mode ] | |
| Focus | | Auto ( Continue / Interval / Zoom Trigger / One Push), Manual Focus | |
| Iris | | ALC ( Adjustable Output Target Level ) / Manual | |
| Day & Night | | Day/Night/Auto | |
| Electric Shutter Speed | | Auto / manual(1/30(25) to 1/10,000) | |
| Exposure Mode | | AUTO / IRIS.P / SHUT.P / MANUAL | |
| Back Light | | OFF / BLC / WDR | |
| Sharpness | | Adjustable | |
| White Balance | | ATW / Indoor(3200K) / Outdoor(5800K) / Manual(1800K ~10500K) | |
| Auto Gain Control | | 0~30dB | |
| Digital Noise Reduction | | Off/On (2D, 3D) | |
| Digital Image Stabilization | | Off/On | |
| Defog | | Off / On(Auto / Manual) | |
| Auto Mode | | OFF / AUTO / SEQ / TOUR | |
| Dynamic Privacy Zone Mask | | Off/On (Up to 16 Areas) | |
| Digital Effect | | Off/Mirror | |
| Alarm Input/Output | | 4 Inputs (TTL 5Vdc), 2 Outputs (0.5A 120Vac, 1A 24Vac) | |
| Scheduling Setting | | Off/Auto Mode/Preset Position | |
| infrared LED | Peak Wavelength | 850nm | |
| | Beam Sprea | Automatically adjusted, Depending on the zoom ratio | |
| | Radiant Distance | 150M | |

**Design and specifications are subject to change without notice.**

| Network Function | |
|---|---|
| Video Compression | H.264 Main and High Profile, Motion JPEG |
| Resolution | 1080P(1920x1080), 720P(1280x720), D1(720x480), CIF(352x240) |
| Frame Rate | Dual-stream mode, H.264 : up to 60 FPS @ 1920 x 1080, Motion JPEG : up to 30 FPS @ 720 x 480 |
| | 2WDR mode, H.264 : up to 30 FPS @ 1920 x 1080 , Motion JPEG : up to 30 FPS @ 720 x 480 |
| Video Streaming | RTP/HTTP, RTP/TCP, RTP/UDP, Multicast |
| Video Bitrate | 128Kbps to 12Mbps, Frame rate and bit rate controllable on-the-fly,<br>VBR / CBR / GOP supported |
| Encryption | Base64 HTTP encryption |
| Access | Multiple user access levels with password protection |
| User accounts | 10 user accounts available |
| RTSP Authentication | On/ Off |
| IP address filter | Yes |
| Multi IP address | Yes |
| Users | 10 simultaneous users |
| OSD | Text overlay for date, time, camera name, and PTZ position |
| IVS (Intelligent Video Surveillance) | Motion detection, Zone Entering, Direction detection, Zone |
| Alarm event triggers | Alarm / motion / audio / Network loss detection |
| Alarm event actions | FTP, HTTP post, SD card |
| Alarm weighted mode | Yes |
| CPU & Memory | Embedded SoC, 1.2GHz, Dual ARM Cortex-A9 & 600MHz ARM11, 1GB DDR3 Memory, 256MB Flash Memory |
| Web PTZ Control | Pan, tilt, zoom in/ out, absolute position, and video-click-n-move |
| PTZ Preset Scheduling | Yes, via web interface |
| Maintenance | Firmware update via HTTP, Firmware available at web site |
| Network Interface | 10/ 100/ 1000 Mbps Base-T, RJ-45 |
| OS requirement | Windows 2000, Windows XP, Windows Vista, Windows 7, Windows 8 |
| Web browser | Windows Internet Explorer 9.0 or above |
| CPU requirement | Intel Core 2 Duo e6400 2.13GHz or above |
| RAM requirement | 2GB 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 Devices | iPhone, iPad and Android support |
| Video Management | ONVIF & LILIN HTTP API / Navigator enterprise 1.0 support |
| Video Display | LILIN Universal ActiveX & LILIN Java Applet |
| OS | Embedded Linux 3.8.0 |
| Audio | Two-way, G.711/ PCM |
| SD Card Recording | Support Micro SD/SDHC/SDXC card for circular recording (card is not included) |

**Design and specifications are subject to change without notice.**

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