



D/N 2MP HD PTZ Dome IR IP Camera



MERIT LILIN ENT. CO., LTD
<http://www.meritlilin.com>

66-IRS130CSE



**IRS1204/1208, IRS1304/1308
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



Introduction

IRS 1204/1208 and IRS 1304/1308 with HD/Full HD resolution offer enhanced and refined video and brings you the most innovative surveillance solutions.

These industry-leading cameras features 20X/30X optical zoom, digital zoom, wide dynamic range, digital noise reduction, back light compensation, and electronic image stabilization.

IRS 1204/1208 and IRS 1304/1308 are designed with compactness in mind, and is capable of making 360 degrees continuous rotation with an adjustable speed of 0.15 to 120 degrees per second to ensure direct and accurate target positioning. When required the dome can quickly complete a 180° rotation, an important feature when something passes directly under the camera.

The cameras supports up to 128 preset positions can be programmed and recalled with an accuracy of 0.183 degree, and can be set to auto-sequence mode to automatically monitor preset points.

Each PTZ Dome has 6 alarm inputs that can drive the dome to any position in seconds.

The built-in H.264 AVC (Advanced Video Coding) video coding engine provides high-quality video, 1080p resolution, efficient bandwidth control, and real-time streaming.

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.

The cameras provide four user-friendly sets of PTZ web interfaces including the lens absolute positioning function.

FEATURES

- Auto Focus Lens
 - Built-in 20X optical zoom lens with focal length 4.7 - 94mm [20X Model]
 - Built-in 30X optical zoom lens with focal length 4.4 - 132mm [30X Model]
- Day & Night (with switchable IR-cut filter)
 - Day : Color
 - Night : Monochrome
 - Auto : Automatic switch from Color to Monochrome when light drops below 10 Lux.
- 12X Digital Zoom
- HD 2.38MP Exmor CMOS sensor [20X Model] / HD 2.12MP CMOS sensor [30X Model]
- Minimum Illumination
 - Color : 0.4Lux [F1.6/1.4, 1/30(1/25)sec, 50% AGC On]
 - Mono : 0.03Lux [F1.6/1.4, 1/30(1/25)sec, 50% AGC On]
 - IR On : 0Lux
- Highly efficient IR LED: Radiant distance 150M
- Beam width of IR LED: Automatically adjusted depending on the zoom ratio
- H.264 AVC/MPEG-4 part 10 real-time video coding
- H.264 and Motion JPEG multi-profile video streaming
- Live monitoring: 1080p(1920x1080), 720p(1280x720), D1(720x480), CIF(352x240)
- Wide Dynamic Range
- Digital Noise Reduction
- Slow Shutter (Sens-Up) Function
- Defog & Enhanced Intensity & Electronic Image Stabilization [30X Model]
- Privacy Mask
- 360° continuous panning
- Up to 128 programmable preset positions
- 2-way audio support
- iPhone and Android Support
- Onvif Support
- Weatherproof IP66
- Power supply options: AC24V or AC100 - 240V

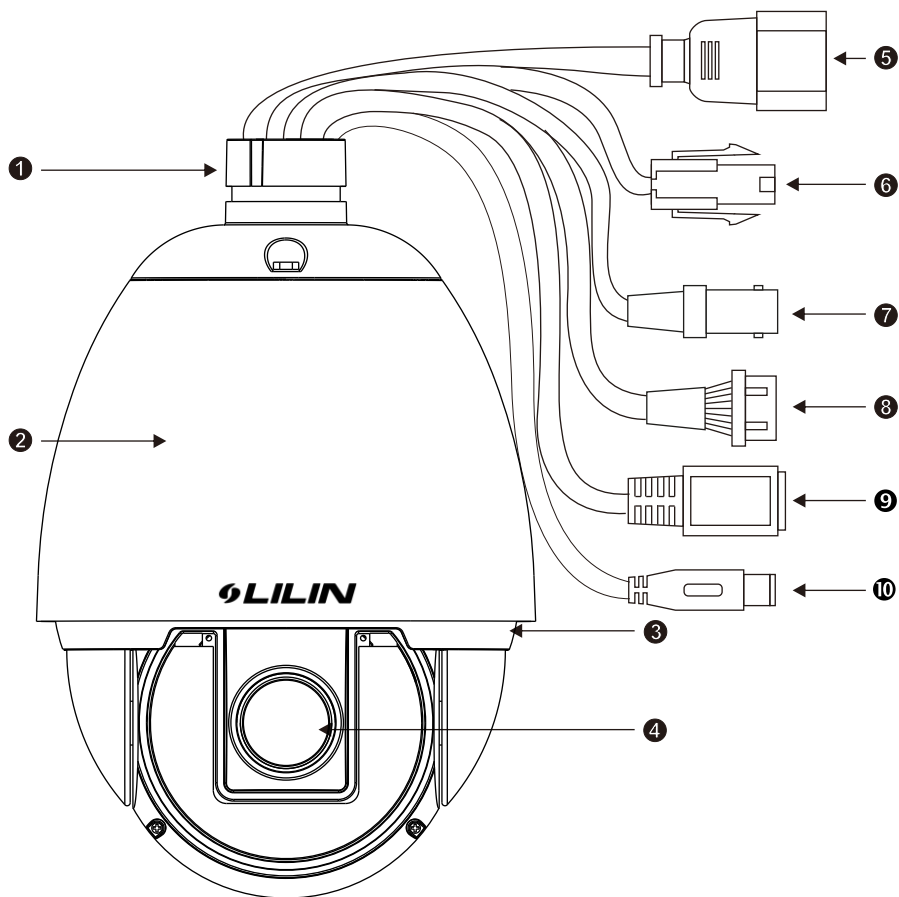
WARNINGS & CAUTIONS

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.



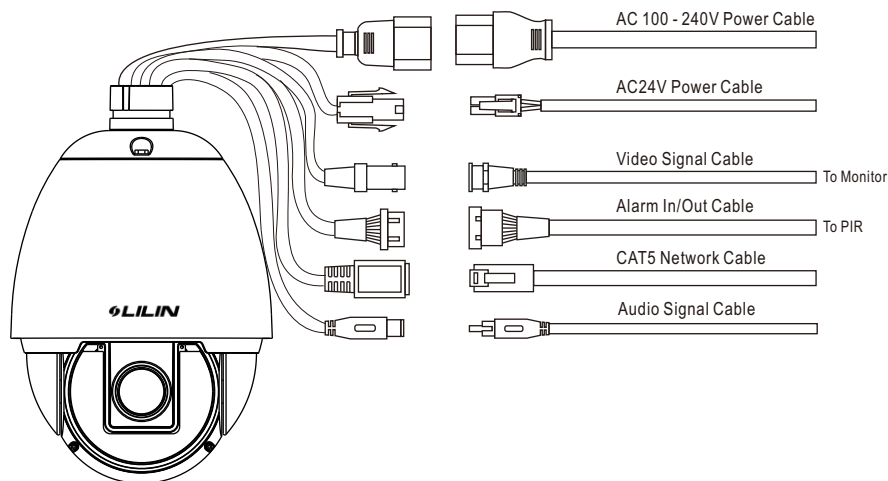
PHYSICAL DETAILS



- ❶ Top Cover
- ❷ Outer Cover
- ❸ Bottom Cover
- ❹ Lens
- ❺ Power-In Jack (AC100~240V)

- ❻ Power-In Jack (AC24V $\pm 10\%$)
- ❼ Video-Out Jack
- ❽ Alarm In/Out connector
- ❾ RJ45 Network Connector
- ❿ Audio In/Out Jack

PTZ Dome Connector and Cable Requirement



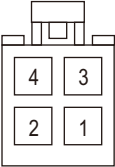
1. AC100 - 240V Power Cable

2. AC24V Power Cable

Recommended Cable:

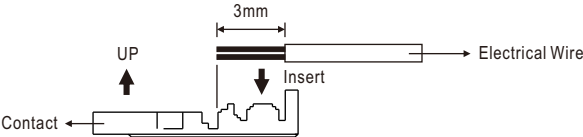
Copper Wire (AWG)		22AWG (0.32mm ²)	20AWG (0.51mm ²)	18AWG (0.81mm ²)	16AWG (1.31mm ²)
Length of Cable (approx.)	(m)	20	30	45	75
	(ft)	65	100	150	250

Accessory Connector Information

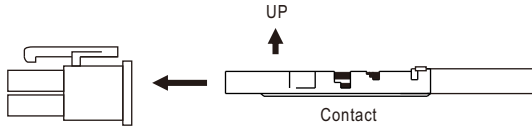
	PIN	Power
	1	AC24V Live (Black)
	2	AC24V Neutral (White)
	3	Earth (Green)
	4	NA

Assemble the Cable with the Accessory Connector

a. Strip back the cable jacket approx. 3mm and separate the individual conductors.



- b. Prepare the individual conductors for clamping. After clamping the contacts, push them into the proper holes in the accessory connector of this camera until they snap in place.



CAUTIONS: CONNECT THIS TO A 24V AC CLASS 2 POWER SUPPLY ONLY.

3. Video-Out BNC Jack

Video Signal Output: CVBS 1.0Vp-p 75Ω BNC

Recommended Cable: 5C2V

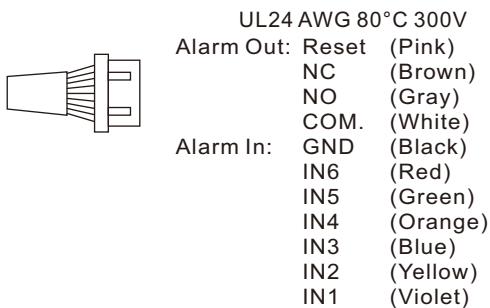
4. Alarm In/Out Connector

Each fast dome consists of 6 alarm inputs and 1 alarm output.

Alarm Input Voltage: 5.6V max.

Alarm Output: 0.5AAC120V, 1AAC24V

Recommended Cable: UL26 AWG 80°C 300V



5. Network Connector RJ45

LAN: 10/100Mbps

Recommended Cable: CAT5

6. Audio In/Out RCA Jack

Audio: 1.4Vp-p (1 Vrms)

Recommend Cable: Shielded signal wire

Low Temperature Power-Up

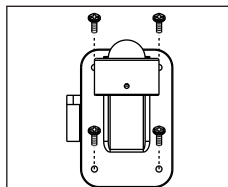
Camera may perform abnormally at low temperature. Hence, follow the below procedure when the camera is off due to power outage or other issues and needs to be restarted under -40°C to -5°C.

Low temperature power-up procedure

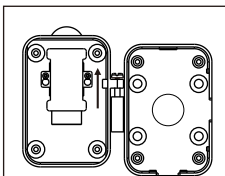
Power up and wait for the heater to warm up for 15 minutes before you operate the camera.

INSTALLATION

Step 1 Separate bracket from the base

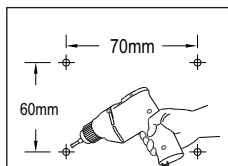


Loosen the four screws from bracket.

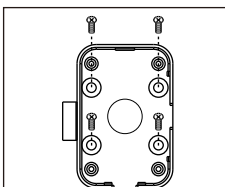


Separate the bracket and base of bracket from the bolt.

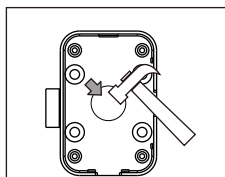
Step 2 Fix base of bracket on the wall



Drill holes at the desired location.

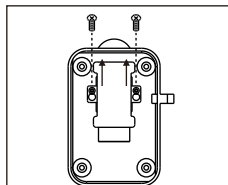


Tighten the four screws to secure the base (These four screws are not included. User must prepare their own screws)

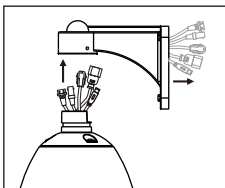


If you have use for this hole, use the included hammer to break the seal.

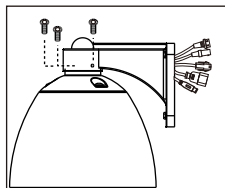
Step 3 Attach camera to bracket



Loosen the two screws from iron pieces of the fixed cable in the bracket and remove the iron pieces.

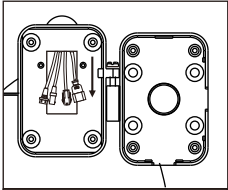


Pull the output cables of the camera in sequence through the bracket tube (AC cable is preferred)

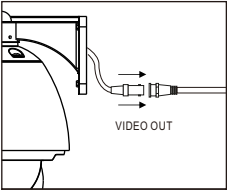


Attach the camera to the bracket, and tighten the three screws.

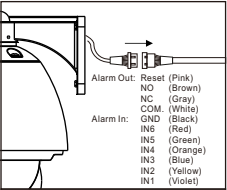
Step 4 Connect Jack



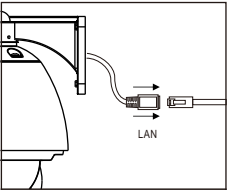
Attach the camera and bracket to the base



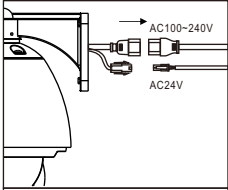
Connect the video cable.



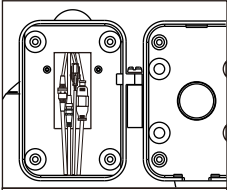
Connect the alarm in/out cable.



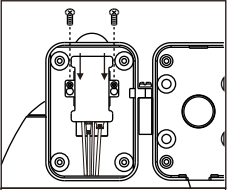
Connect the network cable.



Connect the AC24V or AC100-240V power cable.

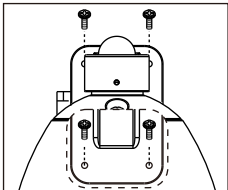


After connecting all the cables, put the cables and connectors in the bracket tube.

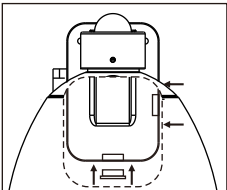


Attach the iron piece of cables to the bracket, and tighten the screws to secure the cables.

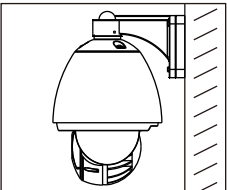
Step 5 Fix bracket and PTZ dome IR IP camera with base



Tighten the four screws to the bracket



Use the rubber cover to shroud the outlet of unused cables.



Complete PTZ dome IR IP camera installation.

SPECIFICATION

20X Day and Night 2MP HD PTZ DOME IR IP CAMERA		
General		
Model		IRS 1204
Power Supply		AC24V ±10%
Power Consumption		67W
Image Pickup Device		1/2.8 Type Exmor CMOS Sensor
Effective Pixels		1944(H) x 1224(V) = 2,379,456(pixels)
Total number of pixel		1952(H) x 1236(V) = 2,412,672(pixels)
Scanning System		Progressive Scan
Video Output		CVBS 1.0Vp-p/ 75ΩBNC
Minimum Illumination	Color	0.4Lux [F1.6, 1/30(1/25)sec, 50%, AGC On]
	Mono	0.03Lux [F1.6, 1/30(1/25)sec, 50%, AGC On]
	IR On	0Lux
IP Rating		IP66
Operating Temperature		-40°C ~ +50°C (-40°F ~ 122°F)
Dimensions		φ 228(D) x 347mm(H)
Weight		4700g
Fan Activation		On: 35°C, Off: 25°C
Pan & Tilt		
Panning Range		360° Endless
Panning Speed		Pan Manual Speed: 0.15° - 120°/s, Pan Preset Speed: 1° - 255°/s
Tilt Range		-5° ~ +90°
Tilt Speed		Tilt Manual Speed: 0.15° - 120°/s, Tilt Preset Speed: 1° - 255°/s
Pan/Tilt Mode		Manual, Auto, Manual Position, Sequential Position
Lens		
Zoom Ratio		20X Optical Zoom
Focal Length		4.7mm(Wide) - 94.0mm(Tele)
Minimum Object Distance		10mm(Wide), 1.0m (Tele)
Maximum Aperture		F1.6(Wide) - F3.5(Tele)
Angle Field of View		59.6°-3.2°(H), 35.7°-1.8°(V) [1080p Mode]
Main Function		
Control Function		Pan and Tilt/ Zoom and Focus/ Iris and ICR/ 128 Preset Position/ Home Position
Digital Zoom Ratio		12X
Zoom Speed		Slow/ MID./ Fast Selectable [Fast: Approx. 3.5 Sec (Tele to Wide) in Manual Mode]
Focus Speed		Slow/ MID./ Fast Selectable [Fast: Approx. 3.5 Sec (Far to Near) in Manual Mode]
Focus		Auto/ Manual
Iris		Auto/ Manual
Day & Night		Auto/ Day/ Night
Slow Shutter (Sens-Up)		Off/ Auto (256X)
Shutter Speed		Auto/ Manual, 1/1(1/0.75)sec ~ 1/30,000sec
Exposure Mode		Auto/ Manual
Back Light Compensation		Off/ On
Wide Dynamic Range		Off/ On
Sharpness		Auto / 1-16
White Balance		Auto (Normal/ Sodium/ Mercury) / Manual (Red/ Blue)
Auto Gain Control		0 - 45dB (16 Steps)
Digital Noise Reduce		Off/ On (Level: 1~3)
Auto Mode		Off/ On (Scan/ SEQ/ Tour/ Patrol)
Privacy Mask		Off/ On (Up to 8 Areas)
Digital Effect		Off/ Mirror/ Flip
Alarm Input/ Output		6 input(TTL DC5V), 1 Output(0.5A AC120V, 1A AC24V)
Schedule Setting		Off/ Auto Mode/ Preset Position
Infrared LED	Peak Wavelength	850nm
	Beam Distance	Automatically adjusted, Depending on the zoom ratio
	Radiant Distance	150M

Network Function		
Video Encoding Format		H.264, Motion JPEG
Resolution		1080P(1920x1080), 720P(1280x720), D1(720x480), CIF(352x240)
Multiple profiles	Profile #1	H.264: up to 30fps @ 1920x1080, MJPEG: up to 30fps @ 720x480
	Profile #2	H.264: up to 30fps @ 1280x720, MJPEG: up to 30fps @ 352x240
	Profile #3	H.264: up to 30fps @ 1920x1080, MJPEG: up to 30fps @ 1280x720
	Profile #4	H.264: up to 30fps @ 720x480, MJPEG: up to 15fps @ 1920x1080
Video streaming		RTP/HTTP, RTP/TCP, RTP/UDP, Multicast
Video bitrate	128Kbps - 5Mbps	
	Frame rate and bitrate 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
OSD		Text overlay for date, time, and camera name
Alarm Function		Image upload over FTP and E-mail by alarm/ motion detection
CPU, memory		Embedded SoC ARM11, 528MHz, 256MB DDR2, 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		10Mbps / 100Mbps, RJ-45
PC requirement	OS : Windows 2000, Windows XP, Windows Vista, Windows 7,8, Windows 8.1	
	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, ONVIF, ICMP, IGMP, SNMP
Mobile phone		iPhone, iPad and Android support
System integration		ONVIF & LILIN HTTP API
CMX		CMX HD3.6/ Navigator 1.0 support
Video display		LILIN Universal ActiveX & LILIN Java Applet
OS		Embedded Linux 2.6.32
Two-way Audio		G.711
SD Card Recording		Support Micro SD/SDHC card for circular recording (Built-in Micro SD card)

Design and specification are subject to change without notice.

30X Day and Night 2MP HD PTZ DOME IR IP CAMERA		
General		
Model		IRS 1304
Power Supply		AC24V ±10%
Power Consumption		67W
Image Pick-up Device		1/3 Type CMOS Sensor
Effective Pixels		1944(H) x 1092(V) = 2,122,848(pixels)
Total number of pixel		1956(H) x 1266(V) = 2,476,296(pixels)
Scanning System		Progressive Scan
Video Output		CVBS 1.0Vp-p/ 75Ω BNC
Minimum illumination	Color	0.4Lux [F1.6, 1/30(1/25)sec, 50%, AGC On]
	Mono	0.03Lux [F1.6, 1/30(1/25)sec, 50%, AGC On]
	IR On	0Lux
IP Rating		IP66
Ambient Operation Temperature		-40°C ~ +50°C (-40°F ~ 122°F)
Dimensions		φ 228(D) x 347mm(H)
Weight		4700g
Fan Activation		On: 35°C, Off: 25°C
Pan & Tilt		
Panning Range		360° Endless
Panning Speed		Pan Manual Speed: 0.15° ~ 120°/s, Pan Preset Speed: 1° ~ 255°/s
Tilt Range		-5° ~ +90°
Tilt Speed		Tilt Manual Speed: 0.15° ~ 120°/s, Tilt Preset Speed: 1° ~ 255°/s
Pan/Tilt Mode		Manual, Auto, Manual Position, Sequential Position
Lens		
Zoom Ratio		30X Optical Zoom
Focal Length		4.4mm(Wide) ~ 132mm(Tele)
Minimum Object Distance		10mm(Wide), 1.5m (Tele)
Maximum Aperture		F1.4(Wide) ~ F4.6(Tele)
Angle Field of View		63.4°~2.3°(H), 37.3°~1.3°(V) [1080p Mode]
Main Function		
Control Function		Pan and Tilt/ Zoom and Focus/ Iris and ICR/ 128 Preset Position/ Home Position
Digital Zoom Ratio		12X
Zoom Speed		Slow/ MID./ Fast Selectable [Fast: Approx. 3.5 Sec (Tele to Wide) in Manual Mode]
Focus Speed		Slow/ MID./ Fast Selectable [Fast: Approx. 3.5 Sec (Far to Near) in Manual Mode]
Focus		Auto/ Manual
Iris		Auto/ Manual
Day & Night		Auto/ Day/ Night
Slow Shutter (Sens-Up)		Off/ Auto (256X)
Shutter Speed		Auto/ Manual, 1/1(1/0.75)sec ~ 1/30,000sec
Exposure Mode		Auto/ Manual
Back Light Compensation		Off/ On
Wide Dynamic Range		Off/ On
Sharpness		Auto / 1~16
White Balance		Auto (Normal/ Sodium/ Mercury) / Manual (Red/ Blue)
Auto Gain Control		0 ~ 45dB (16 Steps)
Digital Noise Reduce		Off/ On (Level: 1~3)
Defog		Off/ 1/ 2/ 3/ Auto
Enhance Intensity		Off/ On (9 Steps)/ HLC (9 Steps)
Electronic Image Stabilization		Off/ On
Auto Mode		Off/ On (Scan/ SEQ/ Tour/ Patrol)
Privacy Mask		Off/ On (Up to 16 Areas)
Digital Effect		Off/ Mirror/ Flip
Alarm Input/ Output		6 input(TTL DC5V), 1 Output(0.5AAC120V, 1AAC24V)
Schedule Setting		Off/ Auto Mode/ Preset Position
Infrared LED	Peak Wavelength	850nm
	Beam Spread	Automatically adjusted, Depending on the zoom ratio
	Radiant Distance	150M

Network Function		
Video compression		H.264, Motion JPEG
Resolution		1080P(1920x1080), 720P(1280x720), D1(720x480), CIF(352x240)
Multiple profiles	Profile #1	H.264: up to 30fps @ 1920x1080, MJPEG: up to 30fps @ 720x480
	Profile #2	H.264: up to 30fps @ 1280x720, MJPEG: up to 30fps @ 352x240
	Profile #3	H.264: up to 30fps @ 1920x1080, MJPEG: up to 30fps @ 1280x720
	Profile #4	H.264: up to 30fps @ 720x480, MJPEG: up to 15fps @ 1920x1080
Video streaming		RTP/HTTP, RTP/TCP, RTP/UDP, Multicast
Video bitrate	128Kbps ~ 5Mbps	
	Frame rate and bitrate 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
OSD		Text overlay for date, time, and camera name
Alarm Function		Image upload over FTP and E-mail by alarm/ motion detection
CPU, memory		Embedded SoC ARM11, 528MHz, 256MB DDR2, 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		10Mbps / 100Mbps, RJ-45
PC requirement	OS : Windows 2000, Windows XP, Windows Vista, Windows 7,8, Windows 8.1	
	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, ONVIF, ICMP, IGMP, SNMP
Mobile phone		iPhone, iPad and Android support
System integration		ONVIF & LILIN HTTP API
CMX		CMX HD3.6/ Navigator 1.0 support
Video display		LILIN Universal ActiveX & LILIN Java Applet
OS		Embedded Linux 2.6.32
Two-way Audio		G.711
SD Card Recording		Support Micro SD/SDHC card for circular recording (Built-in Micro SD card)

Design and specification are subject to change without notice.

DISTRIBUTOR: