ED910 & ED930

720p Analog High Definition
True Day/Night Indoor Dome Camera

User's Manual

EverFocus®

Precautions

1. **Do not install the camera near electric or magnetic fields.** Install the camera away from TV/radio transmitters, magnets, electric motors, transformers and audio speakers since the electromagnetic fields generated from these devices may distort the video image or otherwise interfere with camera operation.

2. **Never disassemble the camera beyond the recommendations in this manual nor introduce materials other than those recommended herein.** Improper disassembly or introduction of corrosive materials may result in equipment failure or other damage.

3. **Try to avoid facing the camera toward the sun**. In some circumstances, direct sunlight may cause permanent damage to the sensor and/or internal circuits, as well as creating unbalanced illumination beyond the capability of the camera to compensate.

4. **Keep the power cable away from water and other liquids and never touch the power cord with wet hands.** Touching a wet power cord with your hands or touching the power cord with wet hands may result in electric shock.

5. **Never install the camera in areas exposed to oil, gas or solvents.** Oil, gas or solvents may result in equipment failure, electric shock or, in extreme cases, fire.

6. **Cleaning.** For cameras with interchangeable lenses, do not touch the surface of the sensor directly with the hands. Use lens tissue or a cotton tipped applicator and ethanol to clean the sensor and the camera lens. Use a damp soft cloth to remove any dirt from the camera body. Please do not use complex solvents, corrosive or abrasive agents for cleaning of any part of the camera.

7. **Do not operate the camera beyond the specified temperature, humidity or power source ratings.** This camera is suitable for indoor operation only. Use the camera at temperatures within -10°C~50°C (14°F~122°F) and humidity between 20%~ 80%; this device is not rated as submersible. The input power source is 12VDC or 24VAC. Be sure to connect the proper + / - polarity and voltage, as incorrect polarity or too high a voltage will likely cause the camera to fail, and such damage is not covered by the warranty.

8. **Mounting.** Use care in selecting a solid mounting surface which will support the weight of the camera plus any wind, snow, ice or other loading, and securely attach the camera to the mounting surface using screws and anchors which will properly support the camera. If necessary (e.g. when mounting to drop ceilings) use a safety wire to provide additional support for the camera.

Safety Notice

Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.   This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.   However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE	ATTENTION! This is a class A product which may cause radio interference in a domestic environment; in this case, the user may be urged to take adequate measures.
RoHS	This Product is RoHS compliant.
WEEE	Your EverFocus product is designed and manufactured with high quality materials and components which can be recycled and reused. This symbol means that electrical and electronic equipment, at their end-of-life, should be disposed of separately from your household waste. Please, dispose of this equipment at your local community waste collection/recycling centre. In the European Union there are separate collection systems for used electrical and electronic product. Please, help us to conserve the environment we live in!

Contents

1. Introduction

Get incredible performance in bright light environments or low light, and the resolution listed in the specification from the actual camera you install. To take full advantage of the amazing resolution available from this advanced imaging technology, the Everfocus eZ.HD Series ED910/930 uses a vari-focal lens together with 1/2.8" SONY 1.37M pixels CMOS to deliver 720p high resolution. Combined with a useable native low light sensitivity of 0.08 lux without using digital slow shutter. The camera truly provides HD images without compromising its 720p video quality, Digital Wide Dynamic Range for clear color images in the most challenging of bright or unbalanced scene lighting conditions. Moreover, the ED930 features 18 LEDs with range of 30m / 100 feet; it also provides true day/night enhanced images in low light environments with guaranteed ZERO ghosting. The cameras are equipped with 3-axis rotation design, allowing wall or ceiling mounting. Your choice of vari-focal 2.8~12mm DC iris lens for easily adjustable field of view; dual voltage operation and a full suite of OSD Menu and DSP functions controllable at the camera (3DNR to save DVR HDD space, privacy masking, mirroring, and much more) This is the camera that you have been waiting for to create analog CCTV systems that produce astounding image clarity in a wide range of indoor applications at the widest range of light levels. The ED910/930 supports both NTSC and PAL scanning systems, which can be switched via OSD.

| Model	Image Sensor	Resolution	IR LEDs	Day / Night
ED910	1/2.8" SONY 1.37M pixels CMOS	720p	No	True Day/Night
ED930			Yes (18 LEDs)	

1.1 Packing List

- Dome Camera x 1
- User Manual x 1
- Test Lead x 1
- DC Power Pigtail Cable x 1
- Quick Installation Guide x 1

- Screw x 3
- Screw Driver x 1
- Plastic Anchor x 3
- Template Plate x 1

1.2 Features

- 720p with high flexibility and performance for astounding image
- 1/2.8" SONY 1.37M pixels CMOS, delivers amazing high sensitivity
- Vari-focal 2.8~12mm DC iris lens to capture the desired field of view
- 18 IR LEDs for 30m/100ft. range -depending on scene IR reflectivity (**for ED930**)
- D-WDR to improve the visibility under high contrast scene
- Provides 3D Noise Reduction ensures less blurry moving subjects, vivid and high SN ratio images even under low light environments
- Support 720p & 960H analog signal output, which can be easily switched by OSD
- Easy lock installation by screwing the base plate to the surface and then locking the camera to the base plate without mounting screws
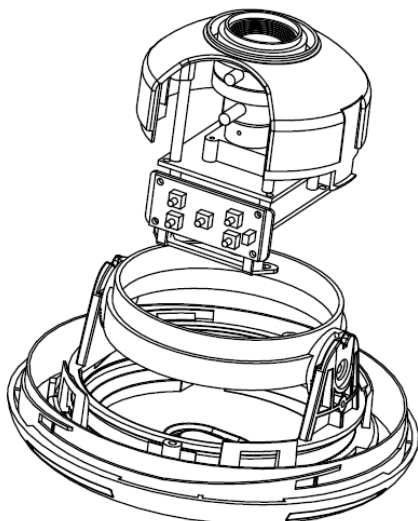
2. Cable Description
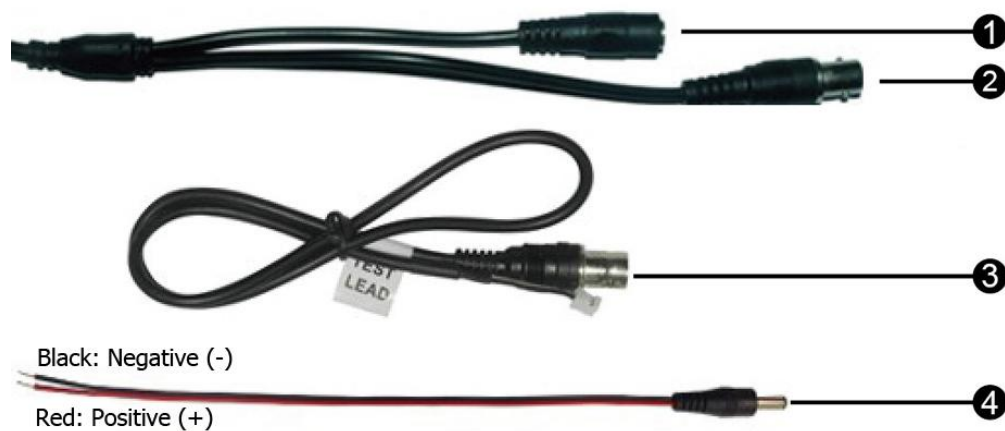
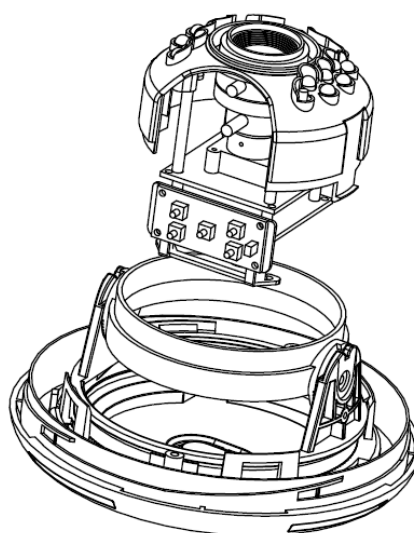| No.	Name	Descriptions
1	**Power Cable**	Connect to a 12VDC or 24VAC power source.
2	**Dual Video Output**	720p and 960H output, using a 75 Ohm BNC-type coaxial cable.
3	**Test Lead**	Connect to a monitor for setting image aim and focus.
4	**DC Power Pigtail Cable**	Optional power pigtail cable. The red wire is positive (+); while the black wire is negative (-).

3. Installation
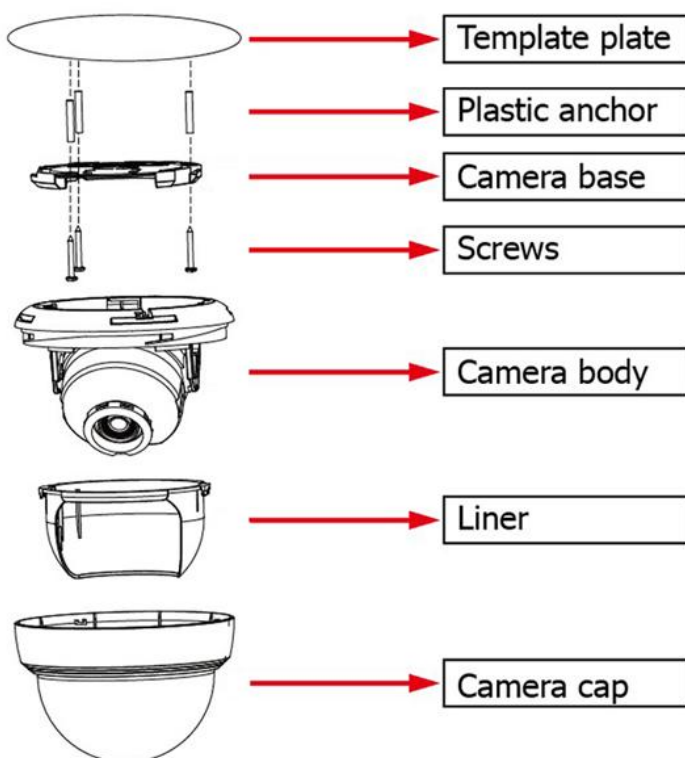
3.1 Installation and Adjustment

ED910 without LED **ED930 with LED**

Camera Breakdown

- Template plate
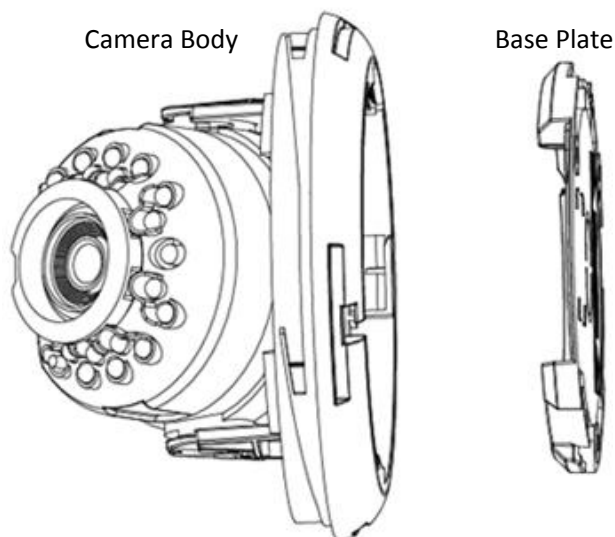- Plastic anchor
- Camera base
- Screws
- Camera body
- Liner
- Camera cap

Important Notice

Please be noted the camera **Base Plate** may loosen when you take out the camera from the pack. It is because the Base Plate is attached to the **Camera Body** without locking tightly in order to simplify the installation procedure.

Camera Body   Base Plate
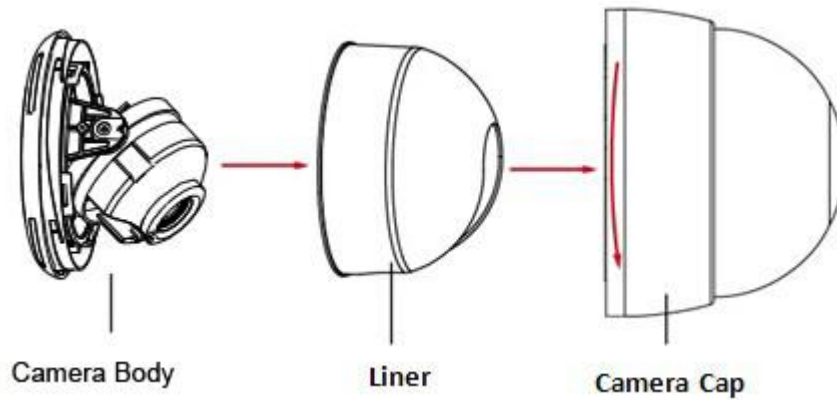

The Base Plate is unlocked to the Camera Body.

1. Stick the **Template Plate** on the position where you want to attach the camera, drill the three holes on the **Template Plate** for screwing the camera with the supplied **Screws** and **Anchors**, and the circle in the middle only if you want to wire the cables through the wall / ceiling (the "Line out" mark represents the factory wiring position).
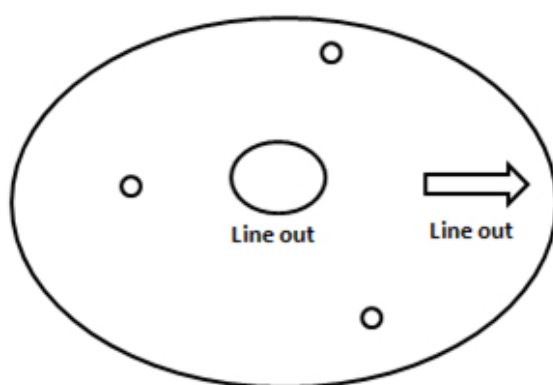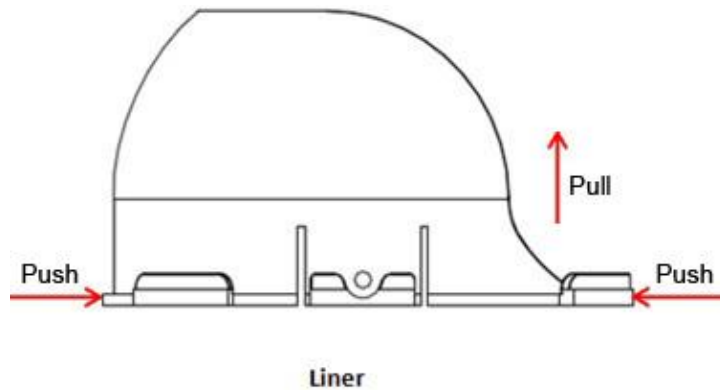

Template plate

2. Insert the supplied three **Anchors** into the holes.

3. Rotate counter-clockwise to remove the camera cap, press and pull to remove the liner.

Camera Body   Liner   Camera Cap

Remark: Hold the liner with one hand, press and pull to remove the liner (refer to the "arrow" label which marked to the liner)

Push   Pull   Push

Liner

4. Push the inner click outward and rotate the base plate counter-clockwise, then remove the camera body from the base plate. (**See the yellow arrow label on the camera**)

Push the inner click outward

Rotate the base plate counter-clockwise

CAMERA FRONT
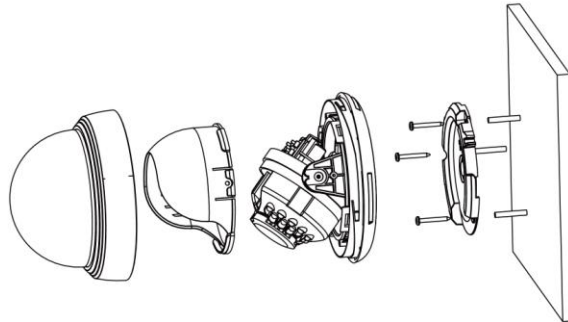
Camera Body   Base Plate
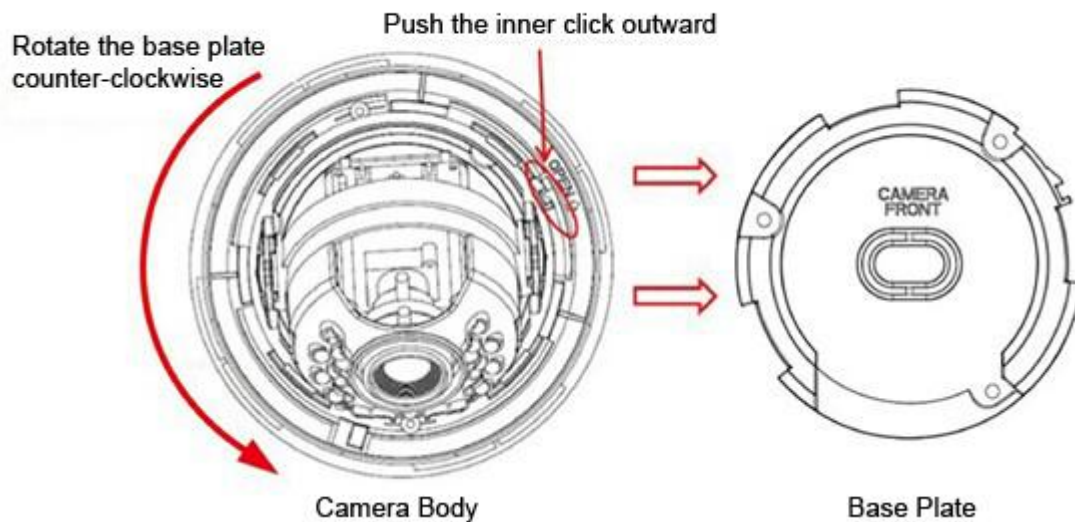
5. Screw the base plate to the wall / ceiling using the supplied three screws. Note that if you want to wire the cables through the wall / ceiling, break the middle part of the base plate.

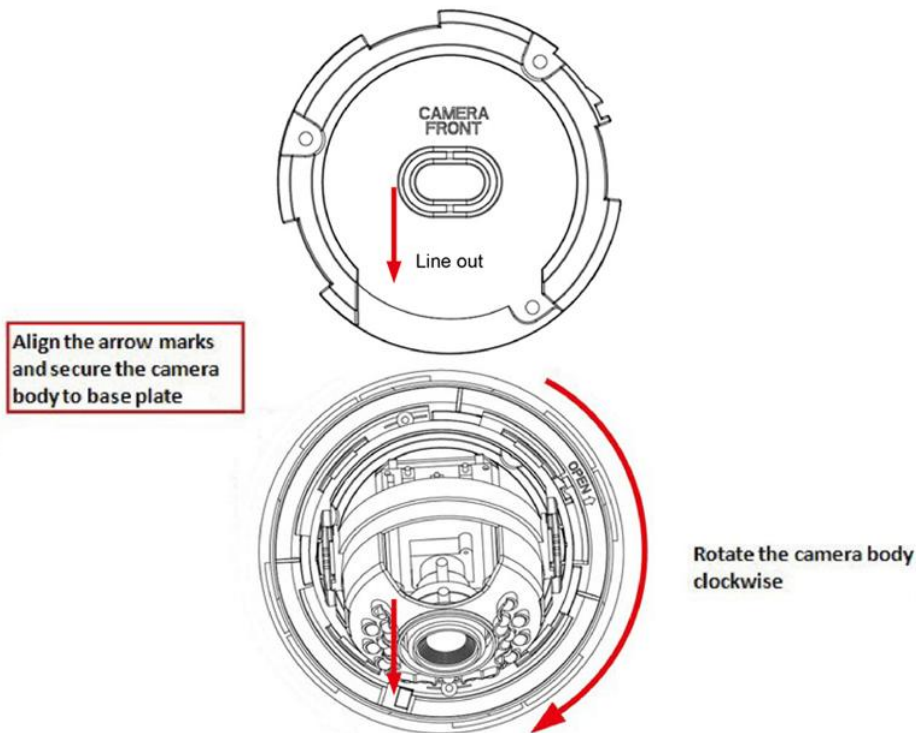6. Lock the camera body back to the base plate, align the arrow marks and rotate the camera body clockwise. A "click" sound should be heard when the camera body and the base plate are firmly locked. (**See the direction arrow labels on the camera**)

7. Connect the camera to the 12 VDC or 24 VAC power source and an AHD DVR or a monitor.

8. Optionally connect the camera to a monitor using the supplied **Test Lead** for adjusting camera angles, focus, zoom and configuring OSD menu

a. Connect one end of the **Test Lead** to the camera and the other end to a monitor.
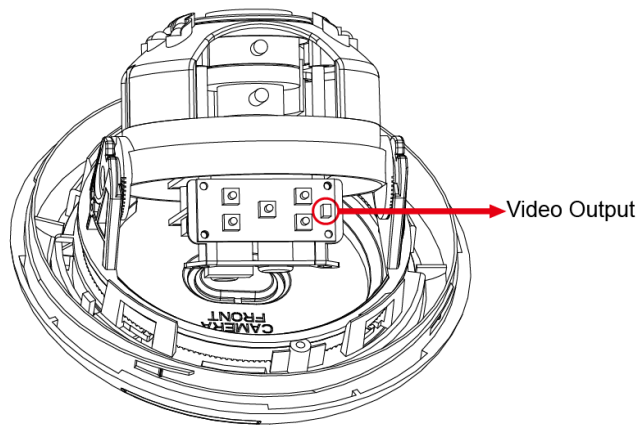
b. To adjust camera angles, simply tilt, pan or rotate the camera.

c. To configure the OSD Menu, using the function button.
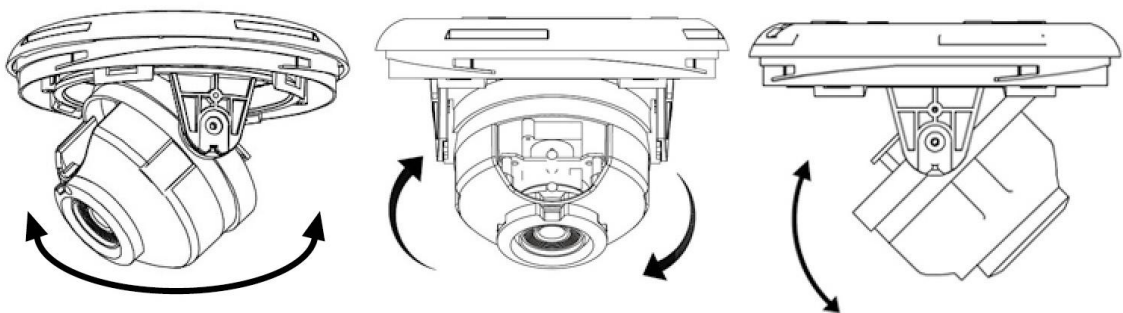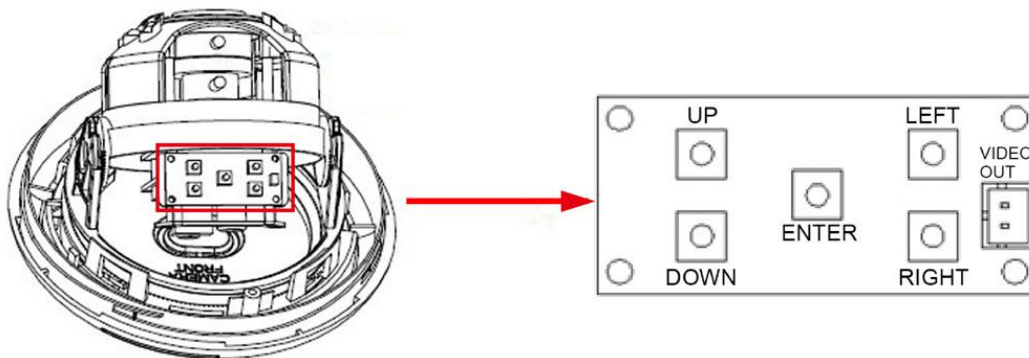

Note: The function button is not only for direction control, also for switching Video format and Video output. Please follow the detailed instruction as below:

✧ Press the "DOWN" button key over 5s to switch video format from PAL to NTSC.
✧ Press the "LEFT" button key over 5s to switch video output from 720p to 960H (720p is the default).
✧ Press the "RIGHT" button key over 5s to switch video output from 960H to 720p.

d. To adjust the Zoom / Focus, using the Zoom / Focus screws. Tighten the zoom /Focus screws using the supplied Screw Driver.
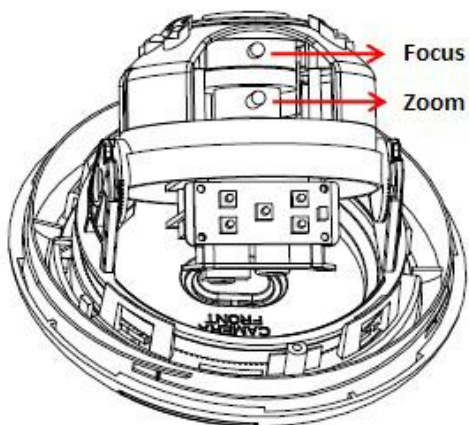
9. Put the liner back and secure the camera cover cap back to the camera.
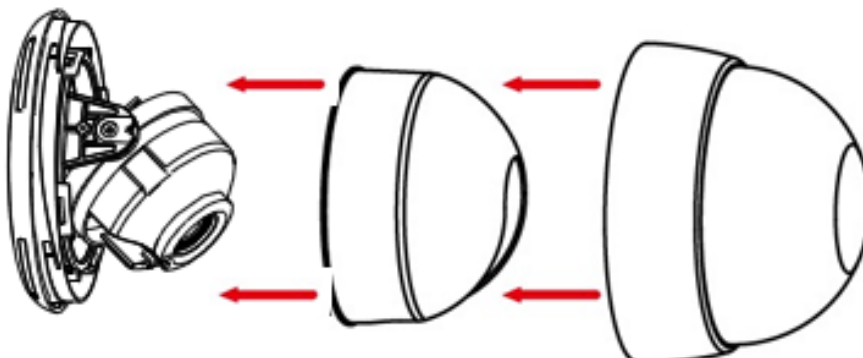
4.   Configuration in the OSD Menu

You can use the function buttons on the rear panel of the camera body to configure camera settings in the OSD menu:

No.	Main	Sub Menu	Sub Menu / Function			
1	Lens	DC*	Mode	Indoor*		
				Outdoor	Min Shu.	NTSC: 1/30*
						PAL: 1/25*
					Max. Shu.	NTSC: 1/60,FLK,1/240, 1/480,1/1000, 1/2000,1/5000*, 1/10000, 1/50000
						PAL: 1/50,FLK,1/200, 1/400,1/1000, 1/2000,1/5000*, 1/10000, 1/50000
			Iris Speed	0 – 15(0*)		
		Manual				
2	Exposure	Shutter	NTSC: 1/30, 1/60, FLK, 1/240, 1/480, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, X2, X4, X6, X8, X10, X15, X20, X25, X30, Auto*			
			PAL: 1/25, 1/50, FLK, 1/200, 1/400, 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, X2, X4, X6, X8, X10, X15, X20, X25, X30, Auto*			
		AGC	0 – 15(15*)			
		Sens-up	Off*			
			Auto	Sens-up	X2, X4*, X6, X8, X10, X15, X20, X25, X30	
		Brightness	1-100(40*)			
		D-WDR	Off*			
			On	Level	0-8(8*)	
			Auto			
		Defog	Off*			
			Auto	Pos/Size	Position, Size, ↑ , ↓ , → , ←	
				Gradation	0-2(0*)	
				Default		
3	Backlight	Off*				
		BLC	Level	Middle*, High, Low		
			Area	Position, Size, ↑ , ↓ , → , ←		

No	Menu				Value	
		Default				
		Select	Area1*, Area2, Area3, Area4			
		Display	Off			
		Display	On*	Position, Size, ↑, ↓, →, ←		
	HSBLC	Black Mask	On*/Off			
		Level	0-100(20*)			
		Model	All Day*			
		Model	Night	AGC Level	0-255(48*)	
		Default				
4	White Balance	ATW*				
		AWC→SET				
		Indoor				
		Outdoor				
		Manual	Blue	1-500(50*)		
		Manual	Red	0-100(50*)		
		AWB				
5	Day & Night	Ext (Ext* for ED930)	D→N(Delay)	0-60(1*)		
			N→D(Delay)	0-60(1*)		
		Auto (Auto* for ED910)	D→N(AGC)	1-255(240*)		
			D→N(Delay)	0-60(1*)		
			N→D(AGC)	1-255(50*)		
			N→D(Delay)	0-60(5*)		
		Color				
		B/W	Burst	Off*/On		
			IR Smart	Off(Off* for ED910)		
			IR Smart	On (On* for ED930)	Level	0-15(4*)
					Area	Position, Size, ↑, ↓, →, ←
			IR PWM	Off		
			IR PWM	0-100(100*)		
6	NR	2DNR	Middle*/Low/Off/High			
		3DNR	Middle*/Low/Off/High			
7	Special	Cam Title	Off*			
			On	0123456789ABCDEFGHIJKLMNOPQRSTUVWXYZ▶→← ↑↓()¯-▣/=&:~,.		
		D-effect	Freeze	Off*/On		
			Mirror	Off*, Mirror, V-flip, Rotate		

			Neg. Image	Off*/On	
		Motion	Off*		
			On	Select	Area1*,Area2,Area3,Area4
				Display	On*	Position, Size, ↑ , ↓ , → , ←
					Off	
				Sensitivity	0-100(64*)
				Color	Green*, Blue, White, Red
				Trans	1.00*,0.75,0.50, 0.25
				Alarm	View Type	Off, Block, Outline, All*
					OSD View	On*/Off
					Alarm Out	On*/Off
					Alarm Sig	High*, Low
					Time	1-15(3*)
				Default	
		Privacy	Off		
			On	Select	Area1*,Area2,Area3,Area4
				Display	Off	
					Color*	Position, Size, ↑ , ↓ , → , ←
					Mosaic	Position, Size, ↑ , ↓ , → , ←
					Inv	Position, Size, ↑ , ↓ , → , ←
				Color	White*, Black, Red, Blue, CYAN, Yellow, Green
				Trans	1.00*,0.75,0.50, 0.25
				Default	
		Language	ENG*/CHN1/CHN2/GER/FRA/ITA/SPA/POL/RUS/POR/NED/TUR		
		Defect	Live DPC	Off	
				On*	AGC level	0-255(65*)
					Level	0-100(100*)
			White DPC	Off	
				On*	Pos/Size	Position, Size, ↑ , ↓ , → , ←
					Start	Close the iris then press
					DPC View	Off*/On
					Level	0-60(5*)
					AGC	0-14(14*)

					Sens-up	x2*, x4, x6, x8,x10, x15, x20, x25, x30
			Black DPC	Off*		
				On	Pos/Siz	Position, Size, ↑ , ↓ , → , ←
					Start	Press Enter
					DPC View	Off*/On
					Level	0-255(255*)
		RS485	CAM ID	0-255(1*)		
			ID Display	Off*/On		
			Baud Rate	2400,4800,9600,19200 ,38400		
8	Adjust	Sharpness	Off			
			Auto*	Level	0-10(6*)	
				Start AGC	0-255(50*)	
				End AGC	0-255(200*)	
		CRT/LCD	CRT	Black Level	0-60(0*)	
				Blue Gain	0-100(50*)	
				Red Gain	0-255(50*)	
			LCD*	Gamma	User*,0.45,0.50,0.55,0.60, 0.65,0.70,0.75,0.80,0.85,0.90, 0.95,1.00	
				Blue Gain	0-100(50*)	
				Red Gain	0-100(50*)	
		LSC	Off*/On			
		Video. Out	PAL/NTSC			
9	Exit	Save& END /Reset/Not Saved				

5. Specifications

P/N	ED910	ED930
Pickup Device	1/2.8" SONY 1.37M pixels CMOS	
Video Format	NTSC and PAL(can be switched via OSD)	
Effective Pixels	1280 (H)*720 (V)	
Scanning System	Progressive Scan	
Sensitivity	0.08 Lux	0 Lux with IR on
S/N Ratio	Over 50 dB (AGC OFF)	
Electronic Shutter	AUTO, Manual (X30~1/ 50000), FLK	
Video Output	BNC 1.0Vp-p 75Ω	
Gamma Correction	0.45	
Lens Type	2.8-12mm DC Iris	
BLC	OFF/BLC/HS BLC Selectable	
AGC	0~15 Levels	
White Balance	ATW/AWC-SET/INDOOR/OUTDOOR/MANUAL/AWB	
Sync Mode	Internal	
Day/Night	Ext, Auto, Color, B/W, True D/N with ICR，Auto	
IR LED	N/A	18 Units
IR Distance	N/A	Up to 30m/100ft. range(depending on scene IR reflectivity)
OSD Languages	12-Language	
Digital Noise Reduction	2DNR/3DNR, Off	
Defog	Off/Auto(under B/W mode)	
D-WDR	On/Off	
Sens-up	Off/On(x30~x2)	
Mirror	Horizontal/Vertical/HV	
Motion Detection	Off/On for 4 selectable zones (On screen indication on alarm)	
Privacy Mask	Off/On for 4 selectable zones	
Environmental	Indoor	
Power Source	12VDC/24VAC	
Power Consumption	12VDC:1.6w max./ 24VAC: 1.7w max.	12VDC:3.7w max./ 24VAC: 3.5w max.
Operating Temperature	-10°C~50°C / 14°F~122°F	
Humidity	20%~80%	
Dimensions(in/mm)	133 x 96mm / 5.24 " x 3.78"	
Weight(lbs/g)	0.65lbs /295g	0.79lbs /360g
Certifications	CE/FCC/RoHS	

Specifications and designs are subject to change for improving the functionality of this product without notice.

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