Day/ Night Color Camera

USER'S MANUAL

Version 2.0.0

Thank you for purchasing our product. If there is any question or request, please do not hesitate to contact dealer. This manual is applicable to DS-2CC102/112/192P(N)(-A), DS-CC502/512P(N)(-A), DS-2CC592P(N), DS-2CC532P(N), DS-2CC102/112/192P(N)-MM, DS-2CC132P(N), DS-2CC511/591P(N)-A, DS-2CC502/512/592P(N)-FB, DS-2CC502/512 P(N)-FD1/FD2 Day / Night Color Camera.

This manual may contain several technically incorrect places or printing errors, and the content is subject to change without notice. The updates will be added into the new version of this manual. We will readily improve or update the products or procedures described in the manual.

⚠ Safety Instructions

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss.

The precaution measure is divided into "Warnings" and "Cautions"

Warnings: Serious injury or death may cause if any of the warnings is neglected.

Cautions: Injury or equipment damage may cause if any of the cautions is neglected.

⚡	⚠
Warnings Follow these safeguards to prevent serious injury or death.	**Cautions** Follow these precautions to prevent potential injury or material damage.

⚡ **Warnings**

1. In the use of the product, you must be strict compliance with the electrical safety regulations of the nation and region.

2. Input voltage should meet both the SELV(Safety Extra Low Voltage) and the Limited Power Source with AC 24V or DC 12V according to the IEC60950－1 standard. Please refer to technical specifications for detail information.

3. Do not connect several devices to one power adapter as adapter overload may cause over-heat or fire hazard.

4. Please make sure that the plug is firmly connected on the power socket.

5. When the product is mounted on wall or ceiling, the device shall be firmly fixed.

6. If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

7. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not assume any responsibility for problems caused by unauthorized repair or maintenance.)

Cautions：

1. Make sure the power supply voltage is correct before using the camera.

2. Do not drop the camera or subject it to physical shock.

3. Do not touch CCD (Charge Coupled Device) modules with fingers. If cleaning is necessary, use clean cloth with a bit of ethanol and wipe it gently. If the camera will not be used for an extended period, please turn on the lens cap to protect the CCD from dirt.

4. Do not aim the camera at the sun or extra bright places. A blooming or smear may occur otherwise (which is not a malfunction however), and affecting the endurance of CCD at the same time.

5. The CCD may be burned out by a laser beam, so when any laser equipment is on using, make sure that the surface of CCD will not be exposed to the laser beam.

6. Do not place the camera in extremely hot, cold(the operating temperature shall be$-10℃\sim+60℃$), dusty or damp locations, and do not expose it to high electromagnetism radiation.

7. To avoid heat accumulation, good ventilation is required for operating environment.

8. Keep the camera away from liquid while on using.

9. While on a delivery, the camera shall be packed in its original packing, or packing of the same texture.

10. Regular part replacement: a few parts (e.g. electrolytic capacitor) of the equipment shall be replaced regularly according to their average enduring time. The average time varies because of differences between operating environment and using history, so regular checking is recommended for all the users. Please contact with your dealer for more details.

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Chapter 1 Introduction

1.1 Features

Adopting high performance CCD and CMOS advanced print circuit board design technology, the camera features high resolution, low distortion, low noise, etc., and thus is extremely applicable to the surveillance system and image processing system. It provides the following features:

- High performance image sensor CCD, high resolution, capable of providing clear images.
- Low illumination, color/B&W auto switch.
- Backlight compensation
- Auto white balance
- High SNR provides clear and pleased image.
- Auto electronic shutter control, adaptive to different environments.
- Auto gain control, with brightness adaptive.
- Advanced technique design, with high reliability.

1.2 Functions

ICR Switch: The camera provides two operation modes: color, and B&W. You can increase sensitivity in low light conditions by switching to B&W mode (removing the IR cut filter). Color mode is preferred in normal lighting conditions.

AGC: AGC allows users to adjust the gain of amplifier, enabling the camera to output the standard video signal in different lighting conditions. As scene lighting decreases, the system will automatically adjust, adding a mixture of AGC and slow shutter according to the AGC limit setting. In low illumination, AGC will increase camera's sensitivity, and output bright and clear video.

S/N ratio: It refers to the ratio between signal voltage and noise voltage. While the ratio is larger, the effect of noise is less, and the image is more spotless.

White Balance: This feature automatically processes the viewed image to retain color balance over a color temperature range.

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1.3 Description of Box Camera

1.3.1 Side Panel of Box Camera

|	Video	DC
1	Power	Damp-
2	NC	Damp+
3	Video	Driver+
4	GND	Driver-
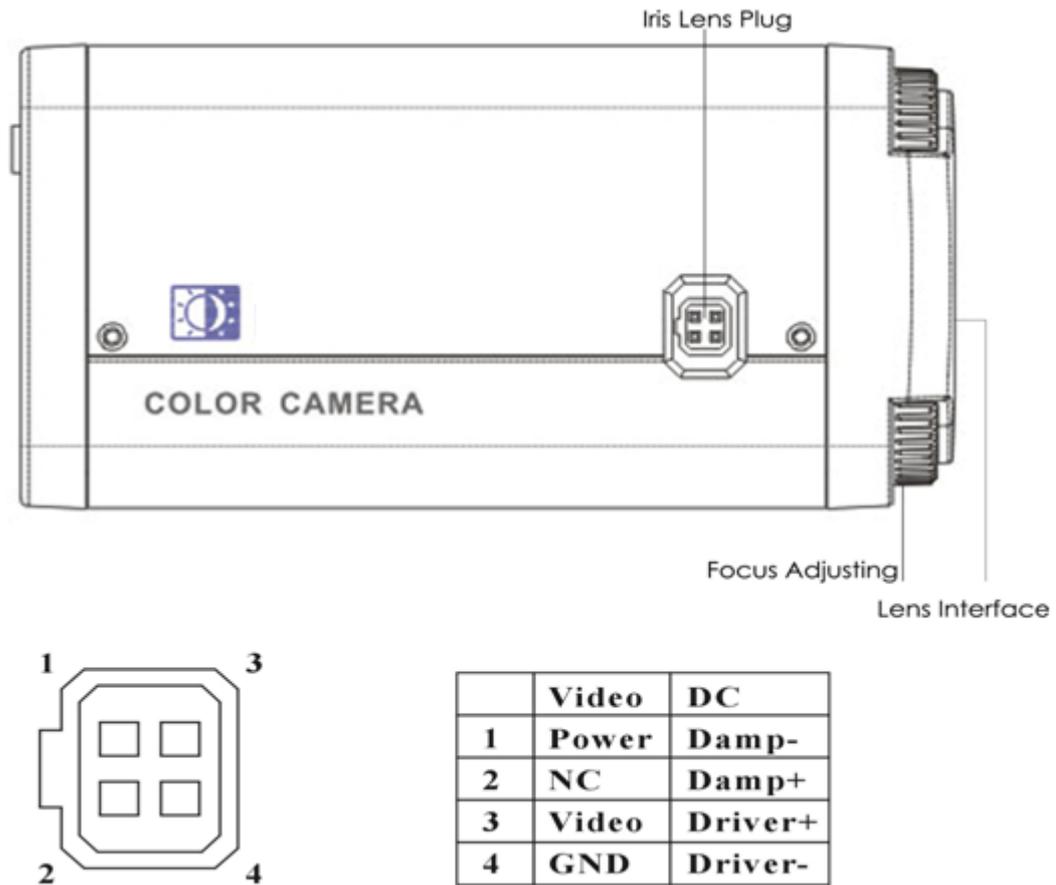
Figure 1.1 Side Panel of Box Camera

1. **Iris Lens Plug:** The camera provides an iris lens plug in negative pattern with four square holes, and the definition of pins is shown above. The plug of video drive auto iris adopts three pins, i.e. Power +, Video, and GND; while the interface of DC drive auto iris adopts four pins, i.e. Damp+, Damp-, Drive+ and Drive-.
2. **Focus Adjusting:** When it still fails to realize precise focusing after having confirmed the correct lens interface, the back focus adjustment may be required. Operate the following steps: tighten the lens firstly and then loosen the fixed back focus ring; rotate the lens slowly until the video image turns to be clear, and finally tighten and lock the back focus ring.
3. **Lens Interface:**
    The lens interface adopts CS connector type.

1.3.2 Rear Panel of Box Camera
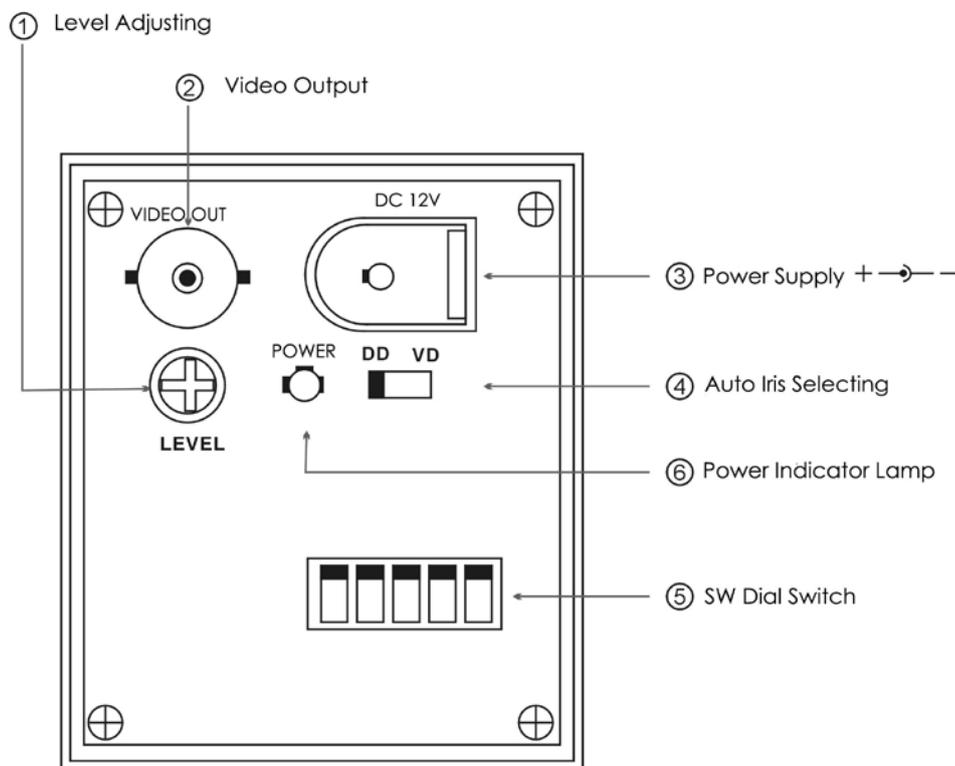
Figure 1.2 Rear Panel of Box Camera

① **Level Adjusting：**

The level adjusting is valid for iris adjusting in DC drive mode, while invalid for video drive mode.

② **Video output:**

The video output is in 1Vp-p Composite Output (75-ohm /BNC).

③ **Power supply:**

During the power supply, make sure the input voltage is 12VDC +10%, ranging from 10.8V to 13.2V.

④ **Auto Iris Selecting：**

Auto iris lens of both video and DC drive modes can be adopted for this camera. Please select DD mode for DC

drive auto iris lens or VD mode for video drive auto iris lens.

⑤ **SW Dial Switch Settings are listed as below:**

NAGC	Normal AGC: Normal automatic gain control. The gain is about 30dB with this function turned on.
SAGC	Super AGC: Super automatic gain control. The gain is about 60dB with this function turned on.
FL	Use it to avoid the spot caused by different circuit power.
BLC	Backlight Compensation: Automatically adjust exposure value for backlight compensation.
AI	Auto Iris: Turn the switch to *AI* to enable auto iris.
AES	Auto Electronic Shutter: Turn the switch to *AES* for non-auto-iris mode.
SHARP	Turn on the SHARP function to obtain sharper edge for images.
SOFT	Turn on the SOFT function to obtain softer edge for images.

Note: The rear panel varies according to different models. E.g., the rear panel of DS-2CC132P(N) as shown below is different from Figure1.2.
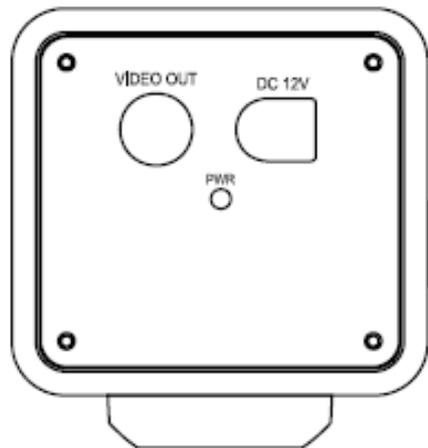

Figure 1.3 DS-2CC132P(N) Rear Panel

1.3.3 Description of Dome Camera
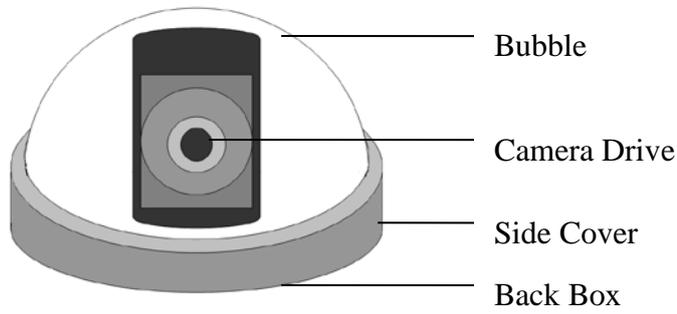

Figure 1.4 DS-2CC502/512/592P(N)(-FB) DS-2CC532P(N)
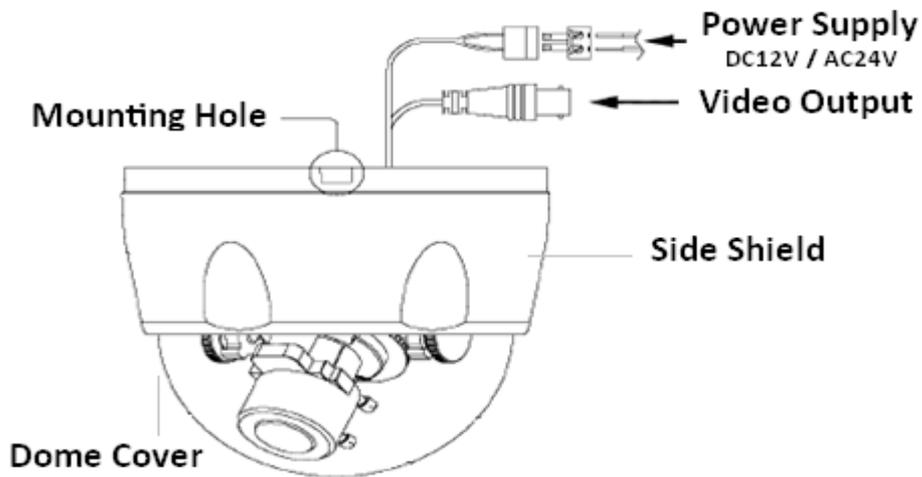

Figure 1.5 DS-2CC511/591P(N)-A
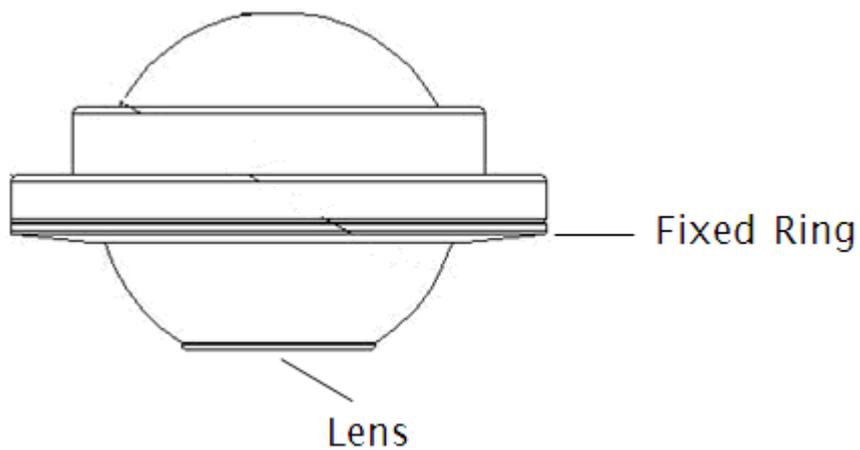
Figure 1.6 DS-2CC502/512P(N)-FD1/FD2

Chapter 2 Installation

Prior to mounting, please make sure that the device in the package is in good condition and all the assembly parts are complete.

2.1 Box Camera Mounting

Note: The lens must be the CS assembly type with the weight less than 1kg. The outshoot part behind the mounting surface must be less than 5mm. Please adopt C-type adapter for C assembly lens mounting.

Two mounting methods are selectable for box camera: wall mounting and in-ceiling mounting. The dome camera generally adopts the in-ceiling mounting. Please refer to the following steps (take the in-ceiling mounting for example, and the wall mounting steps keep the same).

1. Select the mounting mode and mount the corresponding camera bracket. For cement wall application, the expansion screws must be installed firstly (the mounting holes of the expansion screws should align with those in the mounting bracket), and then install the mounting bracket, as shown as figure 2.1. For wood wall application, directly use the self-tapping screws to install the mounting bracket to the wall. Please note that the mounting wall must be capable of supporting three times the sum weight of camera and mounting bracket.

2. Install the camera. Use the mounting base on top of camera to screw the camera into the mounting bracket.
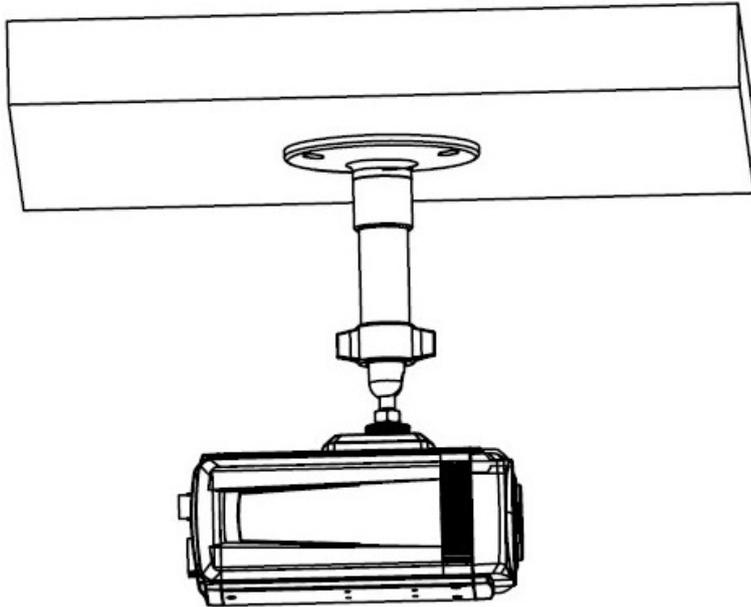
Figure 2.1 Install the Camera

3. Adjust the camera to the desired monitoring location, and then tighten the screws on the mounting bracket to secure the camera in position.

4. Install the lens into the camera, and fasten the lens after having adjusted the focus.
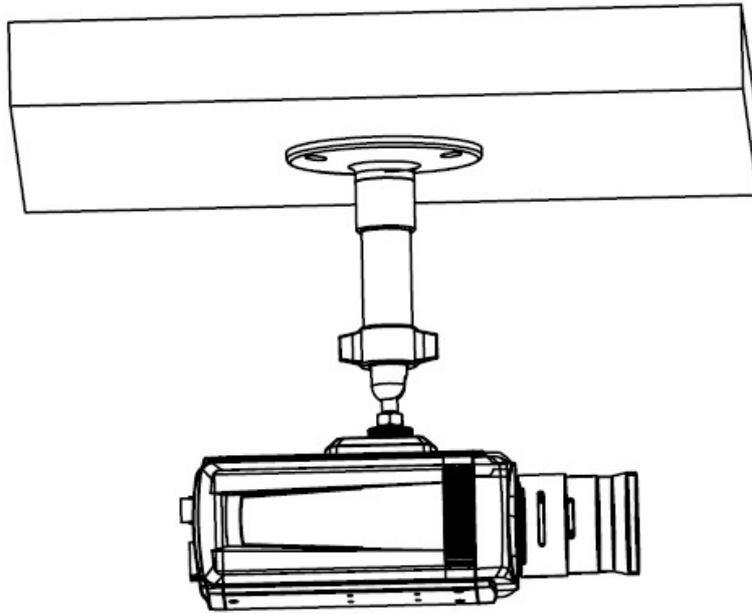
Figure 2.2 Install the Lens

2.2 Dome Camera Mounting

The following section has described the DS-2CC511/591P(N)-A series dome camera installation as the example.

Note: the mounting wall must be with certain thickness and capable of supporting three times the weight of dome camera.

1. Use your hands to hold the back box of dome camera and then rotate the bubble in anti-clockwise direction to remove it.
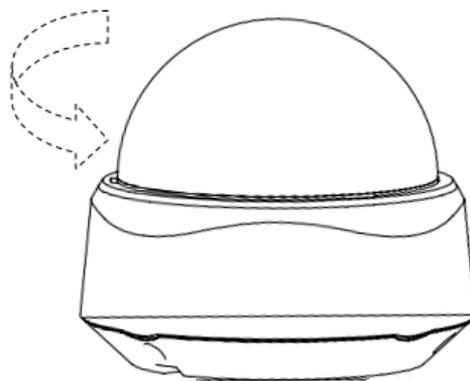

Figure 2.3 Remove the Bubble

2. By referring to the Figure 2.2.2, use the self-tapping screws to secure the back box of dome camera to the wall.

   Note: the expansion screws are required for the cement wall mounting application.
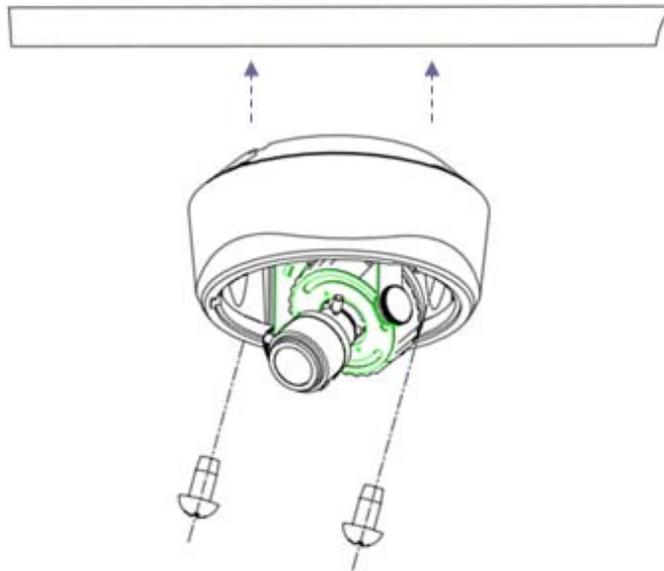
Figure 2.4 Secure Back Box to the Wall

3.   Adjust the lens to the desired monitoring location and obtain the clear images. This series dome camera has the pan movement range of 0~355°and the tilt movement range of 0~90°.

Note: Loosen the fixed screws on the lens before adjusting it; and after adjustment, tighten the screws again.
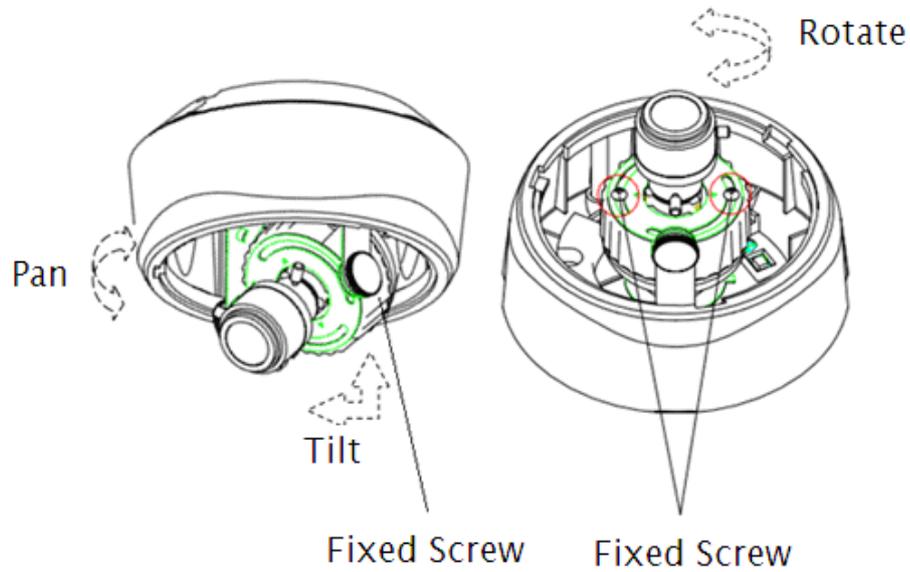

Figure 2.5 Adjust Lens

4.   Rotate the bubble in clockwise direction to replace it to the dome camera.
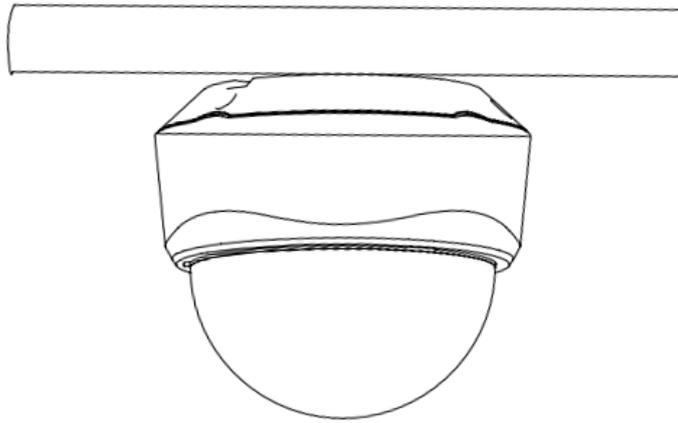
Figure 2.6 Replace the Bubble

The installation of DS-CC502/512P(N)(-A), DS-2CC592P(N), DS-2CC502/512/592P(N)-FB, DS-2CD502/512 P(N)-FD1 /FD2 and DS-2CC532P(N) series dome camera keep the same with the instructions described above.

Note:

1. The bubble of DS-CC502/512P(N)(-A), DS-2CC592P(N) and DS-2CC502/512/592P(N)-FB series dome camera has two layers. Remove the outer layer by rotating it in anti-clockwise direction and remove the internal layer by rotating in clockwise direction.

2. Apply the hex screwdriver (provided) to loosen the screws on the vandal-proof enclosure for the vandal-proof dome camera.

3. Unscrew the fixed ring before installing the DS-2CD502/512P(N)-FD1/FD2 series dome camera.

Appendix

Day/Night Color Box Camera

Specifications

| Model / Parameter	DS-2CC102P(N)(-A)	DS-2CC112P(N)(-A)	DS-2CC192P(N)(-A)
Image Sensor	1/3 inch SONY Super HAD CCD		
Signal System	PAL / NTSC		
Effective Pixels	PAL: 500 (H) × 582 (V) NTSC: 510 (H) × 492 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1Lux @ F1.2		
Electronic Shutter	1/50 (1/60)s to 1/100,000s		
Day & Night	Electronic		
Auto Iris Lens	DC / Video		
Lens Mount	C / CS mount		
Horizontal Resolution	420 TVL	480TVL	540TVL
Synchronization	Internal synchronization		
Video Output	1Vpp Composite Output		
S/N Ratio	More than 48 dB		
BLC	ON / OFF		
Working Temperature	-10℃ ~ 60℃		
Power Supply	12VDC, ±10%, "-A" series support12VDC / 24V AC, ±10%.		
Power Consumption	2W MAX ("-A" series 3.5MAX)		
Dimension (mm)	63 × 59 × 114(2.5" × 2.34"×4.52")		
Weight	550g (1.2lbs)		

Dimensions

Unit: (mm)
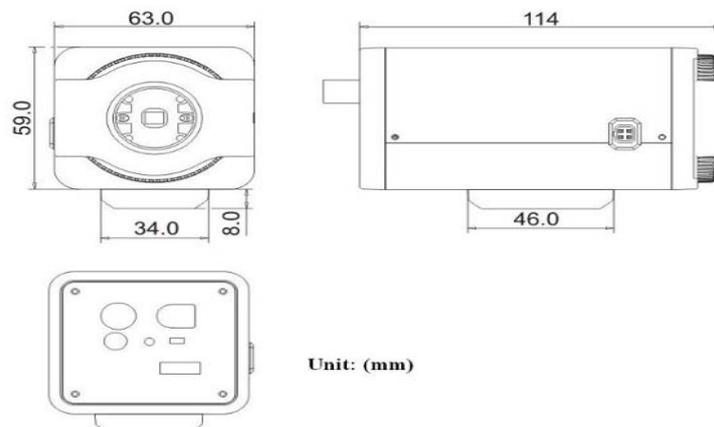
Day/Night Mini Color Box Camera

Specifications

Model / Parameter	DS-2CC102P (N) -MM	DS-2CC112P (N) -MM	DS-2CC192P (N) -MM
Image Sensor	1/3 inch SONY Super HAD CCD		
Signal System	PAL / NTSC		
Effective Pixels	PAL: 500 (H) × 582 (V) NTSC: 510 (H) × 492 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1Lux @ F1.2		
Electronic Shutter	1/50 (1/60) s to 1/100,000s		
Auto Iris Lens	DC / Video		
Lens Mount	C / CS mount		
Horizontal Resolution	420 TVL	480TVL	540TVL
Synchronization	Internal synchronization		
Video Output	1Vpp Composite Output		
S/N Ratio	More than 48 dB		
BLC	ON / OFF		
Working Temperature	-10℃ ~ 60℃		
Power Supply	12VDC, ±10%		
Power Consumption	1.5W MAX		
Dimension (mm)	48 × 52 × 70(1.9" ×2.05"×2.76")		
Weight	400g (0.88lbs)		

Dimensions
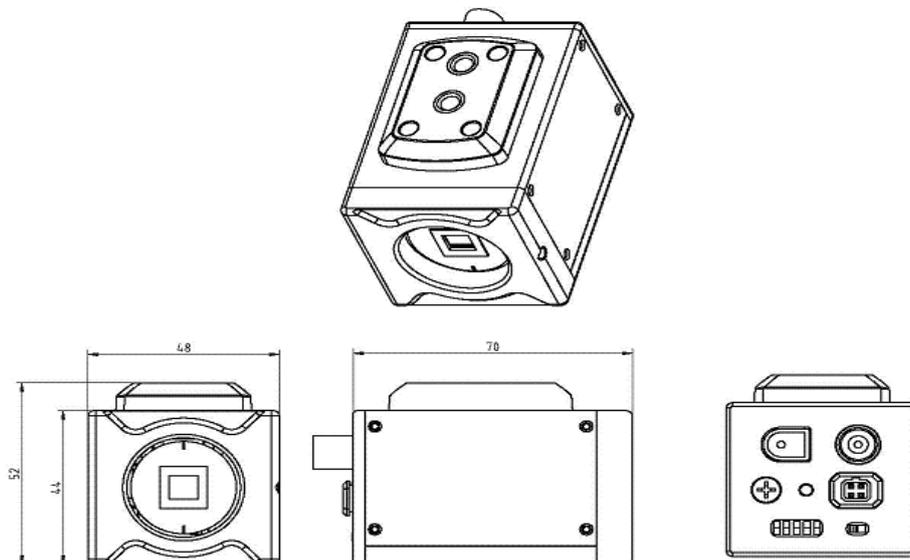
Day/Night CMOS-based Color Box Camera

Specifications

Parameter \ Model	DS-2CC132P/132N
Image Sensor	1/4 inch CMOS
Signal System	PAL / NTSC
Effective Pixels	640 (H) × 480 (V)
Min. Illumination	0.1Lux @ F1.2
Electronic Shutter	1/25 s to 1/15,000 s
Auto Iris Lens	----
Lens Mount	C / CS mount
Horizontal Resolution	480TVL
Synchronization	Internal Synchronization
Video Output	1Vp-p Composite Output (75Ω/BNC)
S/N Ratio	More than 48dB
BLC	ON / OFF
Working Temperature	-10℃ ~ 60℃
Power Supply	12V DC, ±10%
Power Consumption	2W MAX
Dimension (mm)	63 × 59 × 114(2.5" × 2.34"×4.52")
Weight	550g (1.2lbs)

Dimensions

Day/Night Color Dome Camera

Specifications

Parameter \\ Model	DS-2CC502P (N)(-A)	DS-2CC512P (N)(-A)	DS-2CC592P (N)
Image Sensor	1/3 inch SONY Super HAD CCD		
Signal System	PAL / NTSC		
Effective Pixels	PAL: 500 (H) × 582 (V) NTSC: 510 (H) × 492 (V)	PAL: 752 (H) × 582 (V) NTSC: 768(H) × 494 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1Lux @ F1.2		
Electronic Shutter	1/50 (1/60)s to 1/100,000s		
Lens	3.6mm @ F2.0 (2.8mm, 6mm, 8mm, 12mm, 16mm optional)		
Horizontal Resolution	420 TVL	480TVL	540TVL
Synchronization	Internal Synchronization		
Video Output	1Vp-p Composite Output (75Ω / BNC)		
S/N Ratio	More than 48 dB		
BLC	ON		
Working Temperature	-10℃ ~ 60℃		
Power Supply	12VDC, ±10% , (-A) Support 24VAC / 12VDC		
Power Consumption	2W MAX		
Dimension (mm)	Φ138 x 87 (Φ5.5" x 3.45")		
Weight	380g (0.83lbs		

Dimensions

Unit: (mm)
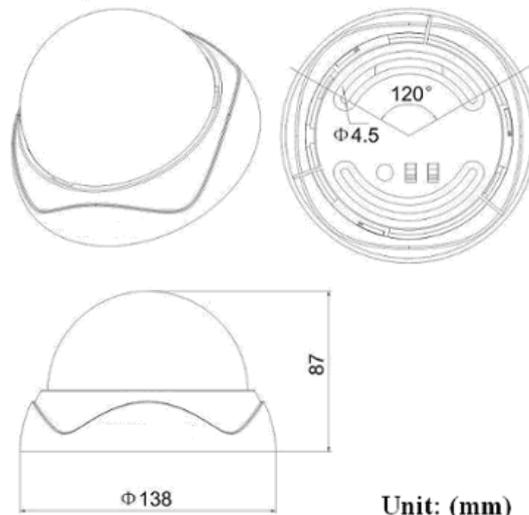
Day & Night Vari-focal Color Dome Camera

Specifications

Parameter Model	DS-2CC511P (N)-A	DS-2CC591P (N)-A
Image Sensor	1/3 inch SONY Super HAD CCD	
Signal System	PAL / NTSC	
Effective Pixels	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)	
Min. Illumination	0.1Lux @ F1.2	
Electronic Shutter	1/50 (60)s to 1/100,000s	
Lens	3.5~9mm Auto Iris Lens (2.8-11mm auto iris lens optional)	
Pan Rotation	0°~355°	
Tilt Rotation	0°- 90°	
Horizontal Resolution	480 TVL	540TVL
Synchronization	Internal Synchronization	
Video Output	1Vp-p Composite Output (75Ω / BNC)	
S/N Ratio	More than 48 dB	
White Balance	Auto	
BLC	ON/OFF	
Working Temperature	-10℃~60℃	
Power Supply	24VAC / 12VDC, ±10%	
Power Consumption	3.5W MAX	
Dimension (mm)	φ124 × 109.1(φ 4.9" ×4.3")	
Weight	400g(0.88lbs)	

Dimensions
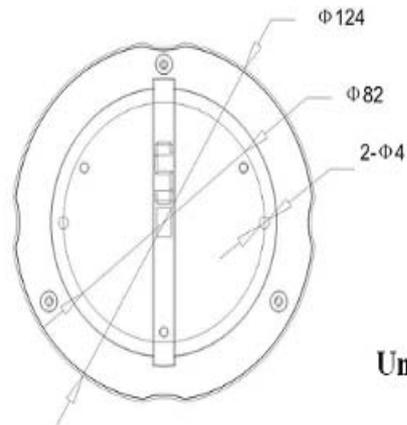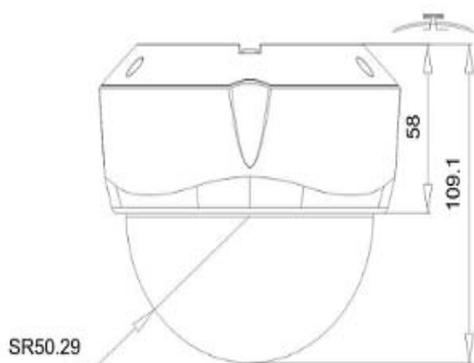
Unit: (mm)

Day & Night Vandal-proof Color Dome Camera

Specifications

Parameter \ Model	DS-2CC502P (N)-FB	DS-2CC512P (N)-FB	DS-2CC592P (N)-FB
Image Sensor	1/3 inch SONY Super HAD CCD		
Signal System	PAL / NTSC		
Effective Pixels	PAL: 500 (H) × 582 (V) NTSC: 510 (H) × 492 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)	PAL: 752 (H) × 582 (V) NTSC: 768 (H) × 494 (V)
Min. Illumination	0.1Lux @ F1.2		
Electronic Shutter	1/50 (1/60)s to 1/100,000s		
Lens	3.5 ~ 8mm (4 ~ 9mm optional)		
Horizontal Resolution	420TVL	480TVL	540TVL
Synchronization	Internal Synchronization		
Video Output	1Vp-p Composite Output (75Ω/BNC)		
S/N Ratio	More than 48dB		
BLC	ON		
Impact Protection	IEC60068-275 test, Eh, 50J; EN50102, exceeding IK10.		
Working Temperature	-10℃ ~ 60℃		
Power Supply	12VDC, ±10%		
Power Consumption	2W MAX		
Dimensions (mm)	φ140 × 92 (φ5.55" × 3.65")		
Weight	660g (1.45lbs)		

Dimensions

(Unit: mm)
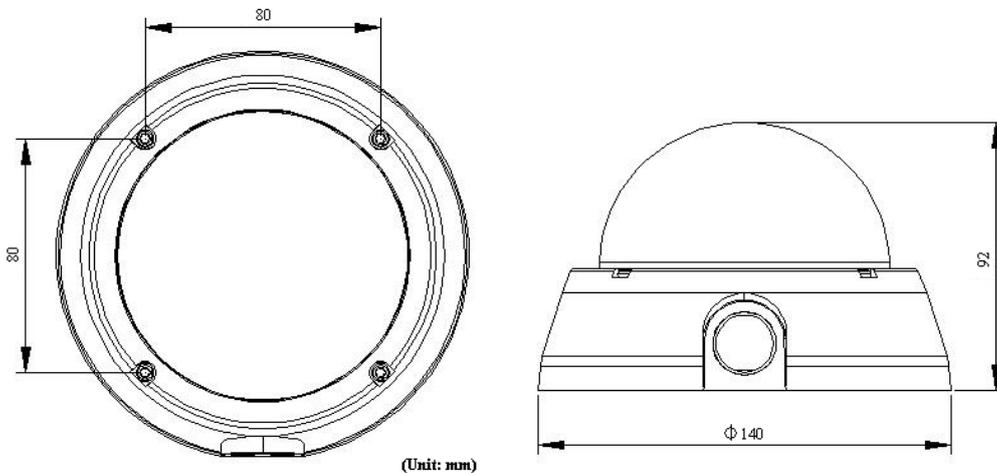
Day & Night COMS-based Color Dome Camera

Specifications

Parameter ＼ Model	DS-2CC532P/N
Image Sensor	1/4 inch CMOS
Signal System	PAL / NTSC
Effective Pixels	640 (H) × 480 (V)
Min. Illumination	0.1Lux @ F1.2
Electronic Shutter	1/25s to 1/15,000s
Lens	3.6mm @ F2.0 (6mm, 8mm, 12mm, 16mm optional)
Horizontal Resolution	480TVL
Synchronization	Internal Synchronization
Video Output	1Vp-p Composite Output (75Ω/BNC)
S/N Ratio	More than 48dB
BLC	ON
Working Temperature	-10℃ ～ 60℃
Power Supply	12V DC, ±10%
Power Consumption	2W MAX
Dimension (mm)	Φ110 × 62 (Φ4.36” × 2.46”)
Weight	330g (0.72lbs)

Dimensions
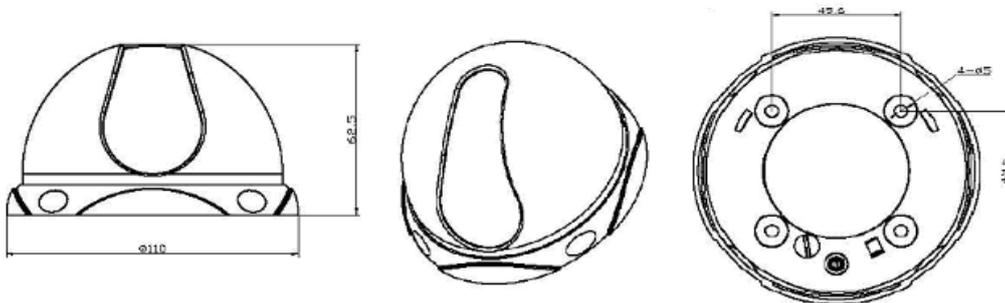
UFO Color Camera

Specifications

Model Parameter	DS-2CC502P / 502N-FD1 / FD2	DS-2CC512P / 512N-FD1 / FD2
Image Sensor	1/3"SONY Super HAD CCD	
Signal System	PAL / NTSC	
Effective Pixels	PAL:500 (H) × 582 (V) NTSC:510 (H) × 492(V)	PAL:752 (H) × 582 (V) NTSC:768 (H) × 494 (V)
Min. Illumination	0.1Lux @ F1.2	
Electronic Shutter	1/50 (1/60s ~ 1/100,000s	
Lens	3.6mm (6mm,8mm optional)	
Horizontal Resolution	420TVL	480TVL
Synchronization	Internal Synchronization	
Video Output	1Vp-p Composite Output (75Ω/BNC)	
S/N Ratio	More than 48dB	
BLC	ON	
Working Temperature	-10℃ ~ 60℃	
Power Supply	DC12±10%	
Power Consumption	1.5W MAX	
Dimensions (mm)	φ54	
Weight	240g	

Dimensions