

# HD CCTV Total Solution

## IR Dome Camera User Manual



The product image shown above may differ from the actual product.  
Please use this camera with a DVR which supports HD video recording.  
Please read the instructions thoroughly before using the product.



### CAUTION

**RISK OF ELECTRIC SHOCK**



#### CAUTION:

To reduce the risk of electric shock, do not expose this apparatus to rain or moisture.

Only operate this apparatus from the type of power source indicated on the label.

The company shall not be liable for any damages arising out of any improper use, even if we have been advised of the possibility of such damages.



The lightning flash with arrowhead symbol, within an equilateral 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 to persons.



This exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.



#### ROHS Announcement

All lead-free products offered by the company comply with the requirements of the European law on the Restriction of Hazardous Substances (RoHS) directive, which means our manufacture processes and products are strictly "lead-free" and without the hazardous substances cited in the directive.



The crossed-out wheeled bin mark symbolizes that within the European Union the product must be collected separately at the product end-of-life. This applies to your product and any peripherals marked with this symbol. Do not dispose of these products as unsorted municipal waste.



#### CE Mark

This apparatus is manufactured to comply with the radio interference.

The company does not warrant that this manual will be uninterrupted or error-free. We reserve the right to revise or remove any content in this manual at any time.

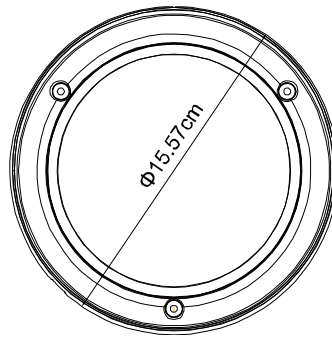
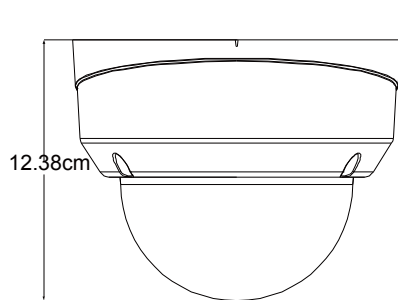
## FEATURES

1. 1/2.8" CMOS Sensor with 1080P video output
2. Motorized vari-focal lens for focal length and focus adjustment directly from HD CCTV DVR
3. External alarm I/O device connection
4. WDR to increase image recognizability in overexposure and dark areas
5. IK10 rated, vandal-resistant case to withstand attempts to open or damage the camera
6. IR effective distance up to 50 meters for 24-hour surveillance

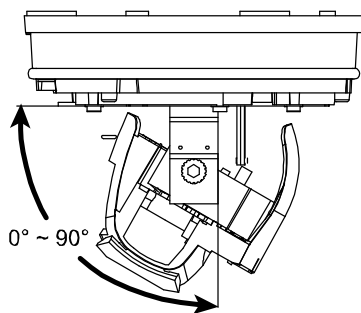
## PACKAGE CONTENT

- IR dome camera
- User manual
- Wrench
- Installation sticker
- Desiccants (x2)
- Screws & wall plugs
- (Optional) Waterproof accessory kit

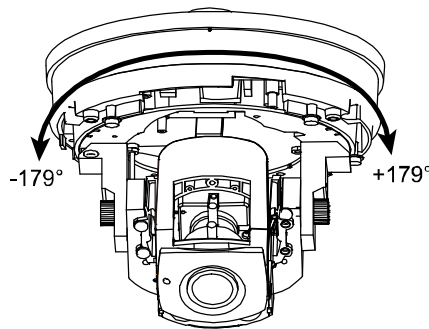
## DIMENSIONS\*



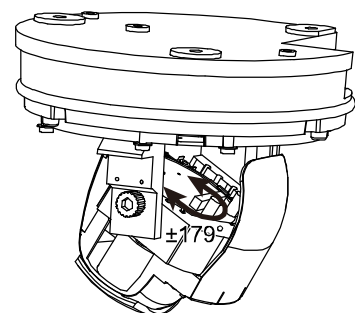
Tilt



Pan



Rotate



\*Dimensional Tolerance: ± 5mm

## SPECIFICATIONS\*

<b>Pick-up Element</b>	1/2.8" SONY CMOS image sensor
<b>Number of Pixels</b>	1936(H) × 1096(V)
<b>Video Frame Rate</b>	1080P@30fps / 1080P@25fps
<b>Min. Illumination</b>	0.1 Lux / F1.4 ~ F2.8, 0 Lux (IR LED ON)
<b>S/N Ratio</b>	More than 48dB (AGC OFF)
<b>Shutter Speed</b>	1/10,000 ~ 1/7.5 (Slow shutter)
<b>Lens</b>	f2.8 ~ 12mm / F1.4 ~ F2.8
<b>Lens Angle</b>	Wide: 103° (Horizontal) / 54° (Vertical) / 122° (Diagonal) Tele: 31° (Horizontal) / 17° (Vertical) / 36° (Diagonal)
<b>IR LED</b>	3 units
<b>IR Effective Distance</b>	Default: Up to 30 meters IR enhanced mode: Up to 50 meters
<b>IR Shift</b>	YES
<b>Smart Light Control</b>	YES
<b>IRIS Mode</b>	AES
<b>White Balance</b>	ATW
<b>AGC</b>	Auto
<b>WDR</b>	YES (120dB)
<b>External alarm I/O</b>	YES (1 input / 1 output)
<b>IP Rating</b>	IP66
<b>Vandal-proof</b>	IK10
<b>Operating Temperature</b>	-20°C ~ 50°C
<b>Operating Humidity</b>	90% or less relative humidity
<b>Power Source (±10%)</b>	DC12V / 1A
<b>Current consumption (±10%)</b>	265mA (IR OFF); 485mA (IR ON)
<b>Optional Peripherals</b>	Wall-mount bracket (PAVM542-BKT(B))

\* The specifications are subject to change without notice.

## INSTALLATION

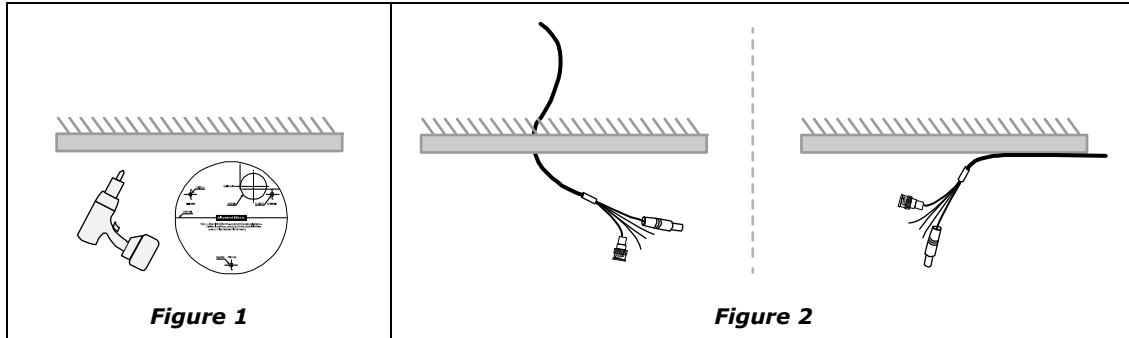
Step 1: Find the installation sticker on the sales package, and paste it to where you want to install this camera. Then, drill screw holes as indicated on the sticker.

Step 2: Arrange the cables to be connected as shown in **Figure 2** depending on the installation location for installation later.

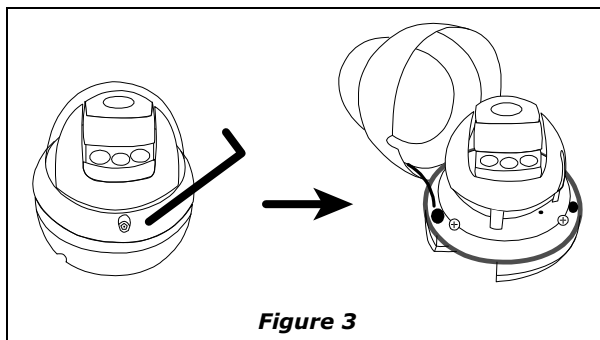
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**NOTE:** A waterproof kit for a coaxial cable could be used to protect the connectors from moisture / water. Please check "WATERPROOF KIT FOR COAXIAL CABLE" to know how to use it.

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Step 3: Remove the camera cover by using the wrench supplied within the sales package, and find the three screw holes on the camera base.

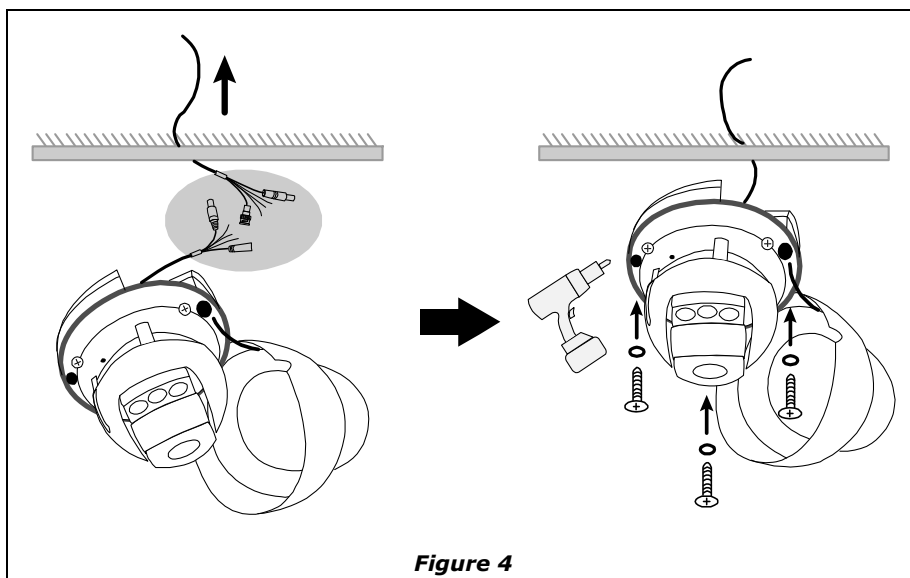


Step 4: Connect the cables. Then, align the screw holes on the camera base with the holes drilled in Step 1, and install the camera.

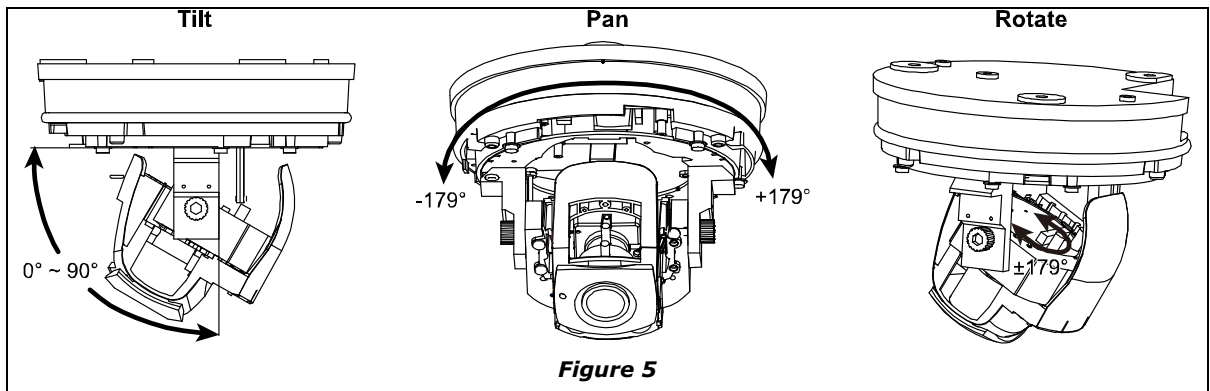
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**NOTE:** Three rubber rings are provided within the sales package. They should be used with the screws during installation for waterproof purposes.

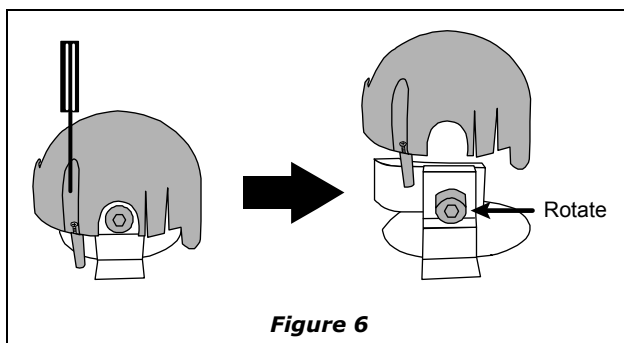
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Step 5: Adjust the viewing angle of the camera.



To adjust the angle vertically, remove the black shield as indicated in **Figure 6**, and rotate the knobs on both sides to loosen the tilt mechanism and move the lens. Then, secure the tilt mechanism by fasten the knobs to fix the angle.



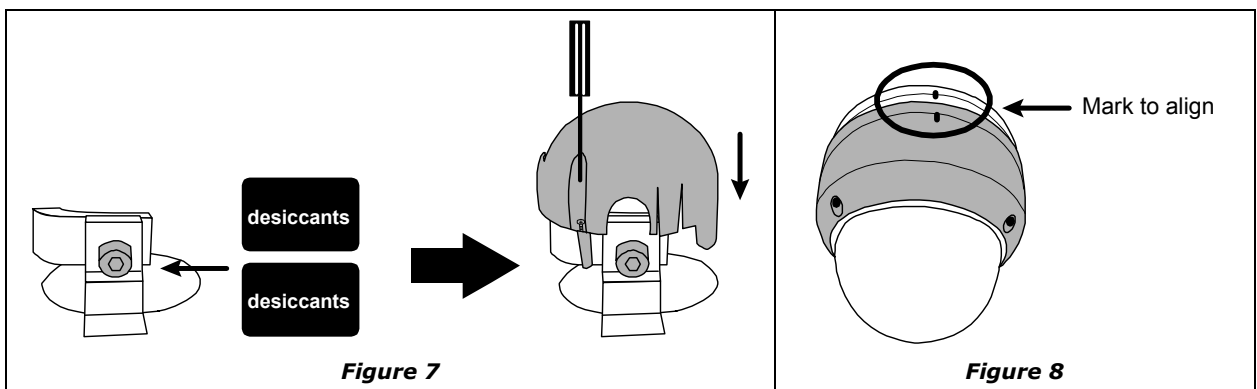
Step6: Replace the desiccants with the two packs of desiccants supplied in the sales package, and replace the black shield back.

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**NOTE:** It's recommended to unpack the desiccants at this step, and finish the whole installation within 2 minutes in case the desiccants absorb too much moisture.

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Step7: Find the mark as indicated below on both the dome cover and the camera base. Align these two marks to replace the dome cover back to the camera.



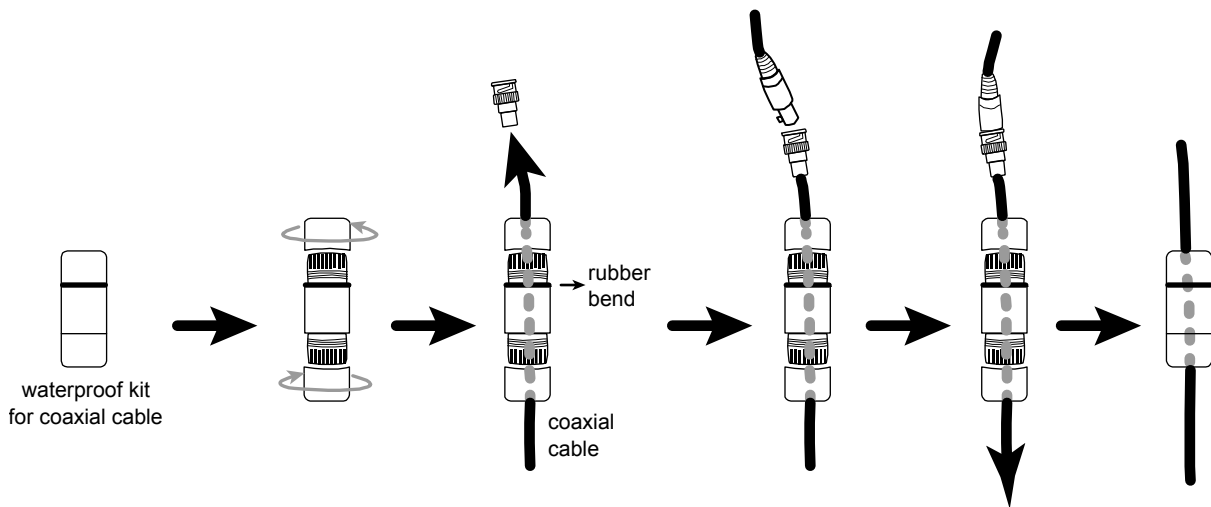
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**NOTE:** Please wipe the inner part of the dome cover against the lens for clear images.

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## WATERPROOF KIT FOR COAXIAL CABLE








**NOTE:** The waterproof kit is optional. Please purchase separately.



## FOCAL LENGTH & FOCUS ADJUSTMENT

This camera supports remote focal length and focal adjustment remotely from our HD CCTV DVR.

On the DVR live view, click the channel which connects this camera to display in the full screen mode, and select  to show the functions:

	Zoom in / out max	Click to zoom in on the image to the largest / zoom out on the image to its original size.
	Zoom in / out	Click to zoom in / out the image.
	Focus near / far	Click to adjust the focus of the image.
	Manual Focus	This function is used to memorize the focus parameters you've made after you use  /  to manually adjust the focal length and focus. The next time when you move to the same focal length, the camera will use the parameters as the ones for Auto Focus.
	Auto Focus	Click to automatically adjust the focus of the camera.

The, go to "ADVANCED CONFIG" → "DCCS", and choose "ANGLE OF VIEW" for final calibration. For details, please refer to the section "CAMERA PARAMETERS".

## WIRE INDICATION FOR ALARM CONNECTION

COLOR	FUNCTION
Yellow	ALARM IN
Blue	ALARM OUT
Black	GND

## CAMERA PARAMETERS

On the DVR, right-click to show the main menu, and go to “ADVANCED CONFIG” → “DCCS”.

In “DCCS”, select the channel which connects this camera, and click “SETUP” to enter the menu of camera parameters.

ADVANCED CONFIG				
CAMERA DETECTION ALERT NETWORK DISPLAY RECORD <b>DCCS</b> NOTIFY	CH1	CH2	CH3	CH4
	MENU			SETUP
	F.W.			1015
	DEVICE			AVTXXX
	CONNECTION			OK
EXIT				

Item	Description
BRIGHTNESS	Click the current value to manually adjust the brightness of the image. The higher the value, the brighter the image.
CONTRAST	Click the current value to manually adjust the contrast of the image. The higher the value, the higher the contrast ratio.
HUE	Click the current value to manually adjust the hue of the image.
SATURATION	Click the current value to manually adjust the saturation of the image. The higher the value, the more saturated the image.
DISPLAY ZOOM RATIO	Select to display the zoom ratio on the screen or not.
VIDEO FORMAT	Select the video format: <b>NTSC / PAL</b> .
WHITE BALANCE	Process the current image to retain color balance over a color temperature range. The options are: <b>Auto, 2500K, 3200K, 4200K, 5800K &amp; 9500K</b> . 9500K = Partially cloudy; 5800K = Mid summer; 4200K = White fluorescent; 3200K = Halogen light bulb; 2500K = Halogen light bulb.
SHARPNESS	Sharpness enhances the clarity of image detail by adjusting the aperture and sharpening the edges in the pictures. Click the current value to manually adjust the sharpness of the image. The higher the value, the sharper the image.
SLOW SHUTTER	Slow shutter is used to increase the exposure time to get clearer image, for example, at night. It's enabled only in the dark environment. The options are: <b>AUTO, 1/15</b> and <b>1/6</b> .
MIRROR	Select <b>ON</b> to turn the images horizontally based on your installation situation when necessary.
FLIP	Select <b>ON</b> to flip the image 180° when necessary.
3D DENOISE	Click and drag the slider to adjust the level from <b>0 ~ 5</b> to decrease the noise shown in the dark environment. 3D denoise analyzes successive pictures to decrease the noise dramatically, but the moving objects might be shown as blurred.
2D DENOISE	Click and drag the slider to adjust the level from <b>0 ~ 5</b> to decrease the noise shown in the dark environment. 2D denoise analyzes only a single picture to decrease the noise. The moving objects can remain smooth edges, but the effect might be limited.
EXPOSURE VALUE	Drag the slider to adjust the exposure level from <b>0 ~ 4</b> . The higher the value, the brighter the image.
WIDE DYNAMIC RANGE	Wide Dynamic Range (WDR) is used when users need to increase image recognizability in an environment where very bright and dark areas exist simultaneously. The options are: <b>LOW / MIDDLE / HIGH / OFF</b> . The more extreme the bright and dark areas exist simultaneously in an environment, the higher the value should choose to get clear images.
FIXED SHUTTER	Shutter Speed is a function that can adjust the duration of the electronic shutter to produce optimum image quality. Select the shutter speed suitable for your environment. The options are: <b>OFF, FIX 1/15, FIX 1/25, FIX 1/30, FIX 1/50, FIX 1/60, FIX 1/100, FIX 1/120, FIX 1/250, FIX 1/500, FIX 1/1000, FIX 1/2000, FIX 1/5000, FIX 1/10000</b> .
FOCUS MODE	Select the default focus mode when you're adjusting the focal length and focus as described in the previous section of “FOCAL LENGTH & FOCUS ADJUSTMENT”. Choose “AUTO” to always automatically adjust the focus first when the focal length is changed; choose “MANUAL” to allow manually focus adjustment first when the focal length is changed.

Item	Description
DEFOG	Select <b>ON</b> to enable the defog function in poor weather conditions such as fog, smog or smoke. The captured image can be improved.
ANGLE OF VIEW	This function is used to slightly calibrate the viewing angle when the focal length and focus adjustment is completed. Select "DOWN" if your camera lens is facing down; select "UP" if your camera lens is facing up.
IR CONTROL	Select <b>AUTO</b> to automatically enable IR LEDs at night or in the dark environment, or <b>OFF</b> to disable this function.
ENHANCE IR	This function is used to enhance IR LEDs performance for longer projection distance. <i>Note: It's not recommended to enable this function for a long time as it might impair the lifetime of IR LEDs</i>
IR TURN ON LEVEL	Select the level for IR light to activate. <b>0 ~ 20</b> . The higher the value, the more sensitive the IR light to activate.
IR DELAY TIME	Set the delay time from <b>1 ~ 60</b> in second after which the day and night switch is made, or select <b>0</b> to disable this function.  This is used for the environment where the light condition may change suddenly and usually last for a short time, for example, the entrance of a parking lot. It may cause the day & night mode switching constantly and damage the camera.  With this function, the camera will delay the mode switch at night since the light change is temporary and unnecessary to pay attention.
RESET DEFAULT	Click to reset all camera settings to their default values. The camera will reboot to complete the reset process.
REBOOT THE SYSTEM	Click to reboot the camera if necessary.