

# INSTRUCTION MANUAL

## CDT4H12IFW HD DOME CAMERA



*Please read this manual thoroughly before use and keep it handy for future reference*

# FCC COMPLIANCE STATEMENT

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.

**FCC INFORMATION** : 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

**CAUTION** : Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

# CE COMPLIANCE STATEMENT

**WARNING** : This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

# IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
7. Only use attachments/accessories specified by the manufacturer.
8. Use only with the cart, stand, tripod, bracket, or table specified by The manufacturer, or sold with the apparatus. When a cart is used, Use caution when moving the cart/ apparatus combination to avoid Injury from tip-over.
9. **CAUTION – THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**
10. **Use satisfy clause 2.5 of IEC60950-1/UL 60950-1 or Certified/Listed Class 2 power source only.**
11. Indoor use only.



## EXPLANATION OF GRAPHICAL SYMBOLS



The lighting 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.



The 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.

### LIMITATION OF LIABILITY

THE INFORMATION IN THIS PUBLICATION IS BELIEVED TO BE ACCURATE IN ALL RESPECTS; HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR ANY CONSEQUENCES RESULTING FROM THE USE THEREOF. THE INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE. REVISIONS OR NEW EDITIONS TO THIS PUBLICATION MAY BE ISSUED TO INCORPORATE SUCH CHANGES.

# PRECAUTIONS

Before installation, carefully read the manual to ensure correct operation and setup, heeding all warnings and instructions.

Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

Ensure manual is kept in good condition for future use.

Do not install the device near any heat sources such as radiators, heat registers, stoves, or other equipment(including amplifiers) that produce heat.

Only use attachments/accessories specified by the manufacturer.

Should any liquid get into the housing, immediately disconnect the device from the power supply and have it

checked by authorized personnel before reusing.

Do not install the device in a place where it is exposed to gas or oil.

Installation and servicing by authorized personnel only, adhering to local safety regulations.

Unless you are an authorized technician, never try to dismantle the device. To avoid electric shock, never remove the screws or covers.

If a camera, do not expose the device to radioactivity. It will cause serious damage to the CCD.

Use Certified/Listed Class 2 power source only.

## Cleaning

Clean the device with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzene as they might damage the finish of the unit.

# TABLE OF CONTENTS

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INTRODUCTION -----	6
CAMERA CONNECTION -----	7
LENS ADJUSTMENT -----	7
CONTENTS OF PACKAGE -----	8
INSTALLATION -----	9
STRUCTURE OF THE SETUP MENU -----	11
DC AUTO IRIS LENS -----	18
SPECIFICATIONS -----	18
EXTERNAL DIMENSION -----	20

# INSTRUCTION

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The 1/2.8" 4M Quad HD CMOS camera, especially for closed circuit television CCTV and security surveillance application.

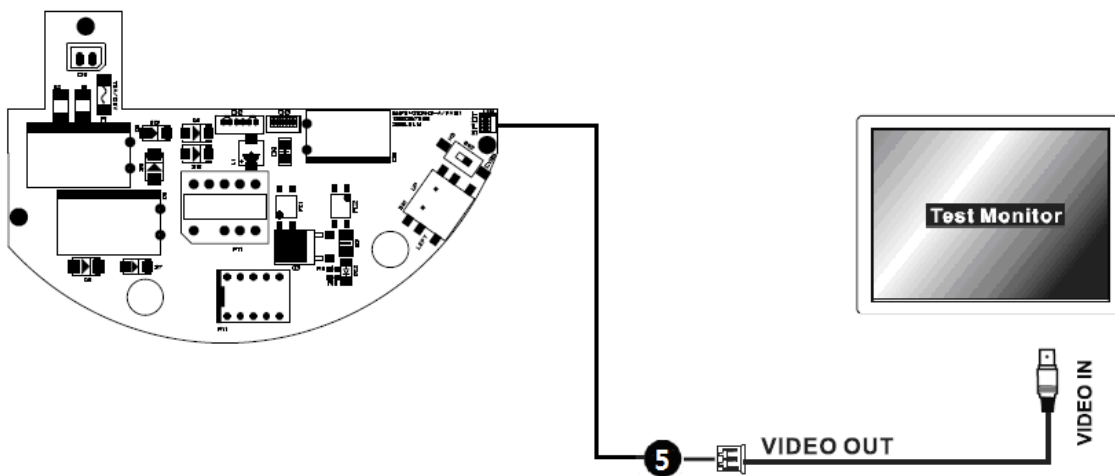
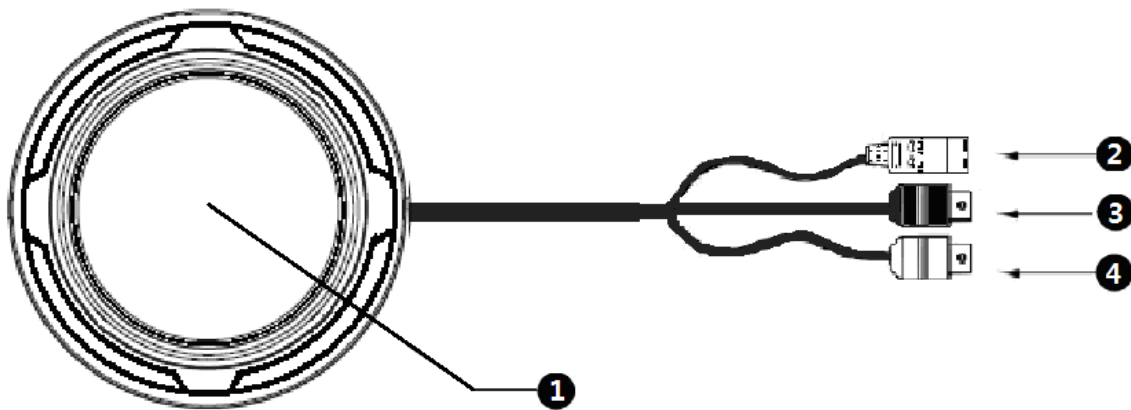
## Features:

- High performance SONY 1/2.8" 5M STARVIS CMOS™
- Min. illumination 0.03 lux(Color), 0 lux(BW, IR LED ON)
- Auto electronic shutter [1/30(1/25) ~ 1/30,000] and manual electronic shutter modes
- True WDR (Wide Dynamic Range) – HD & CVBS
- HD(AHD/TVI Selectable) & CVBS Multi Output – 2 BNC
- D-WDR (Digital Wide Dynamic Range)
- BLC (Back-light compensation)
- HLC (High-light compensation)
- Auto and manual white balance modes (AUTO/AUTOext/Manual/AWB)
- Day & Night (ICR) : Auto / Color / BW /EXTERN
- OSD (on screen display)
- DNR (Digital Noise Reduction)
- IR Range distance up to 30M
- 28EA, 850nm IR LEDs
- Privacy mask Function (16zone)
- Motion Detection (4zone)
- Defog
- Composite Video Output (700TV Lines)
- Operates in AC24V  $\pm$  10% / DC 12V  $\pm$  10%
- Use Certified / Listed Class 2 Power source only



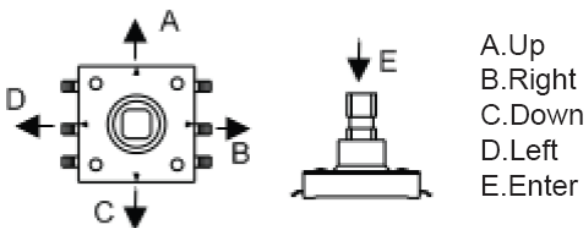
**IMPORTANT** : The user of this camera is responsible for checking and complying with local, state, and federal laws and statutes concerning the recording and monitoring of audio signals.

# CAMERA CONNECTION



- ① Lens : Allows a wide area to be monitored.
- ② Power : 24V AC/ 12V DC power source from a DC 12V or AC 24V  $\pm$  1 0%, 60/50Hz  $\pm$  1Hz Use Certified/Listed Class 2 power source only. DC 12V Type => DC 12V  $\pm$  10% (12VDC is polarity dependant)  
\*If using DC 12V power adaptor, use power supply capable of supplying 8 Watts.
- ③ Video(HD) : BNC(Black) connector used to connect the camera to a DVR, etc.
- ④ Video(CVBS) : BNC(Yellow) connector used to connect the camera to a DVR, etc.
- ⑤ SPOT : Spot connector used to check video(CVBS) output.

# LENS ADJUSTMENT



Tact Switch for motorized lens control.  
Without being in the OSD:

Up – Zoom in  
Down – Zoom out

The lens will then autofocus the lens based on the overall scene being viewed.

# CONTENTS OF PACKAGE

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Installation of the camera must be performed by qualified service personnel in accordance with all local and national electrical and mechanical codes.

Carefully remove the color camera and its accessories from the carton and verify that they were not damaged in shipment.

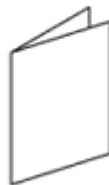
The content of the package includes:

The package contents the following.

Camera in Housing.....	1
Instruction Manual (This Document).....	1
Accessory Kit for Installing.....	1
Drilling guide label.....	1



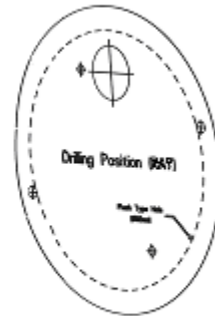
Camera



Manual



Accessory



Drilling  
Guide Label

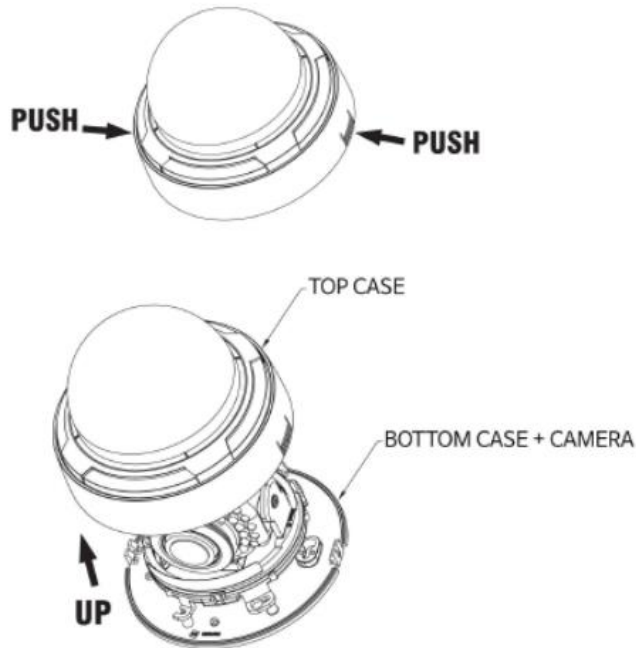


# INSTALLATION

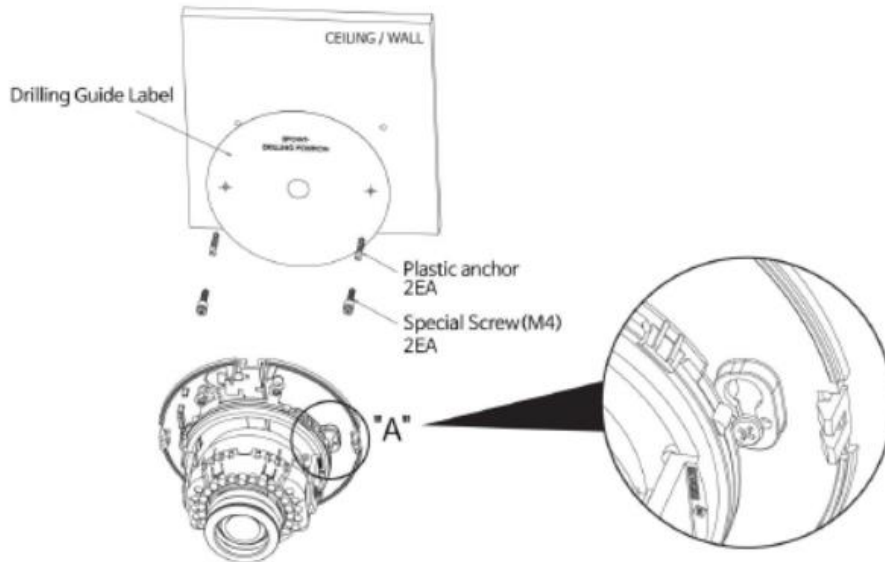
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Carefully remove the contents from the box

1) Push dome case side as following drawings to open the dome cover.



2) Make mounting holes and cable hole in the place(ceiling or wall) to which this dome. Camera is installed using the template sheet..

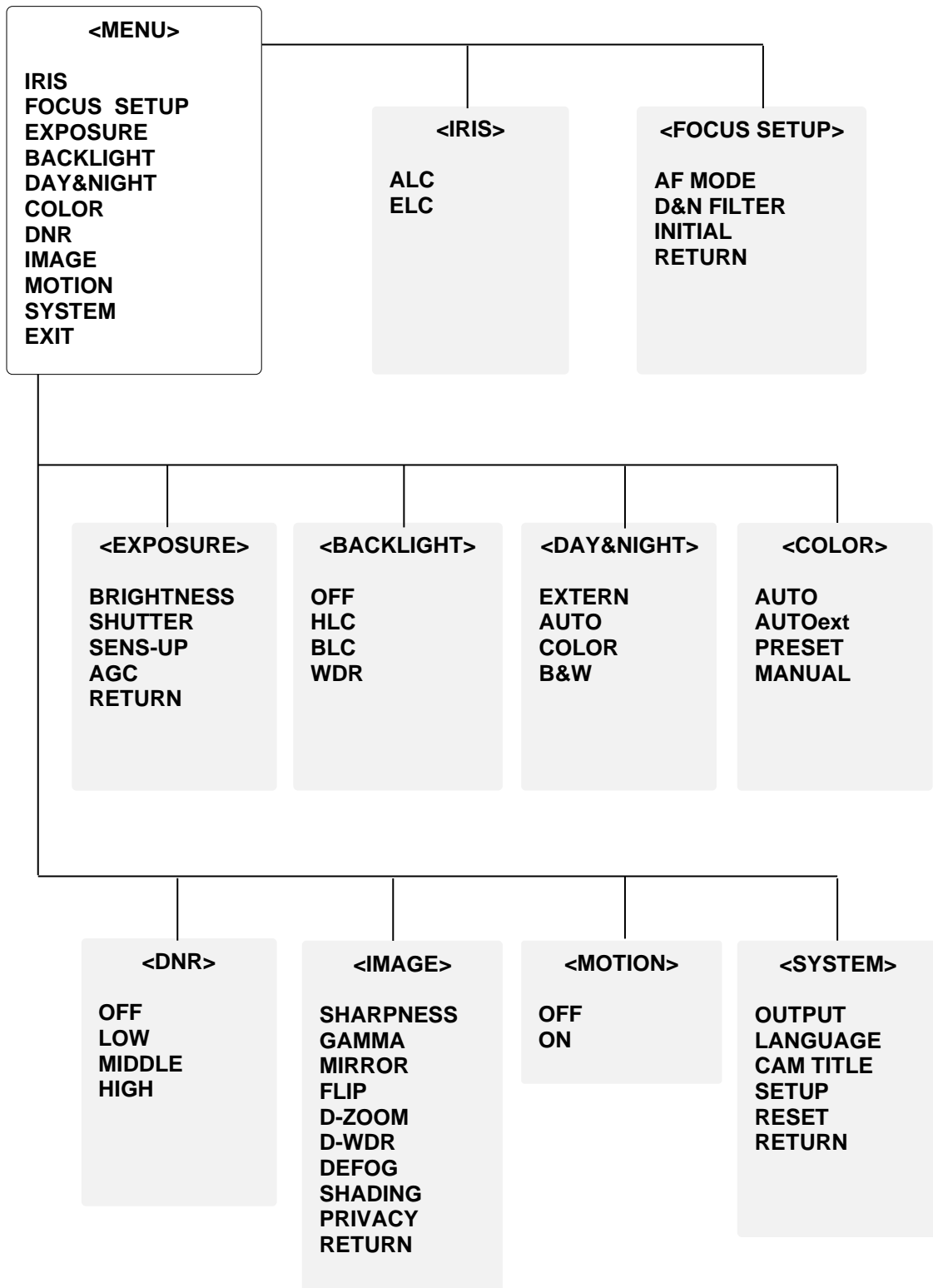


Do not continue to turn the camera in same direction.  
The cable connector can be detached.

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# STRUCTURE OF THE SETUP MENU

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# IRIS

The IRIS menu provides the ability to adjust the IRIS functions of the camera.

- 1) **IRIS** Select the IRIS mode. ▶ ALC(DC), ELC(Manual)

## <IRIS> Mode

MAIN MENU	
▶ IRIS	ALC
FOCUS SETUP	↵
EXPOSURE	↵
BACKLIGHT	OFF
DAY&NIGHT	↵
COLOR	↵
DNR	LOW
IMAGE	↵
MOTION	OFF
SYSTEM	↵
EXIT	

# FOCUS SETUP

The FOCUS SETUP menu provides the ability to adjust the AF MODE, D&N FILTER and INIT functions of the camera.

- 1) **AF MODE** One Shot, Manual.
- 2) **D&N FILTER** Refocus when switching between color/B&W and B&W/color  
▶ SYNC OFF / SYNC ON
- 3) **INIT** Reinitializes the lens

## <FOCUS SETUP> Mode

MAIN MENU	
IRIS	ALC
▶ FOCUS SETUP	↵
EXPOSURE	↵
BACKLIGHT	OFF
DAY&NIGHT	↵
COLOR	↵
DNR	LOW
IMAGE	↵
MOTION	OFF
SYSTEM	↵
EXIT	

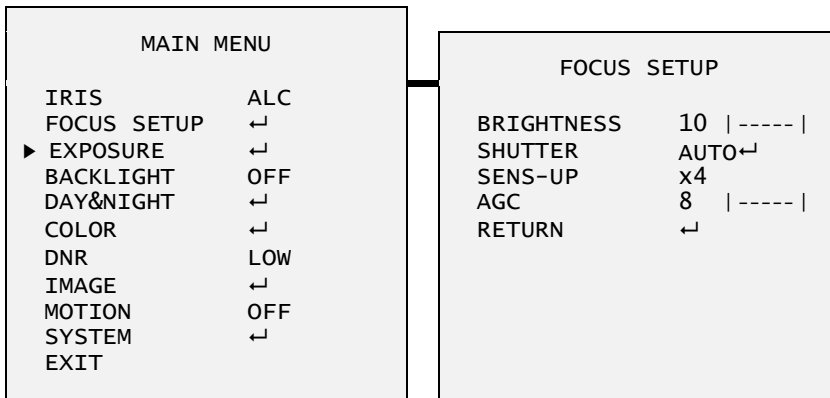
FOCUS SETUP	
AF MODE	ONE SHOT
D&N FILTER	SYNC OFF
INITIAL	ON ↓
RETURN	↵
RETURN	↵

## EXPOSURE

The EXPOSURE menu is used to set the automatic light control method for the camera. It provides the ability to adjust the BRIGHTNESS, SHUTTER speed, SENS-UP and AGC functions of the camera.

- 1) **BRIGHTNESS** Adjust the BRIGHTNESS level. ▶ 0 - 20
- 2) **SHUTTER** Select the SHUTTER speed level.  
 Auto (INDOOR, OUTDOOR, DEBLUR), MANUAL 1/30(25) - 1/30000, FLICKER
- 3) **SENS-UP** Select the Digital Slow Shutter level. ▶ OFF, x2 ~ x32
- 4) **AGC** Adjust the Auto Gain Control level.  0 - 10

### <EXPOSURE> Mode



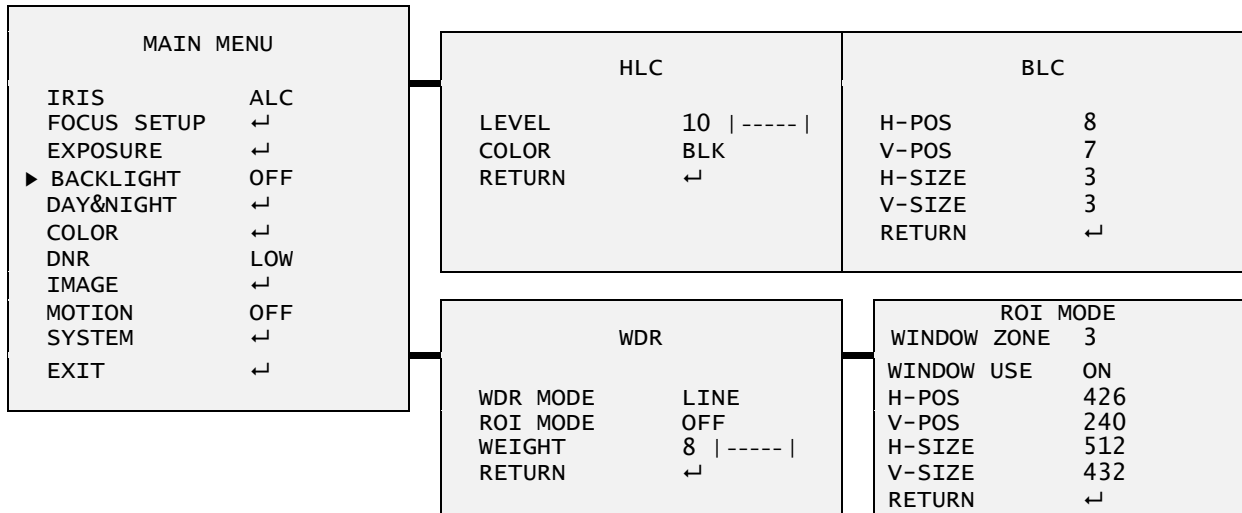
## BACKLIGHT

The BACKLIGHT menu is used to the ability to prevent back lighting from the image.

- 1) **HLC** Mask the high light zone with specific color & level.
  - LEVEL** Select the HLC level ▶ 0 ~ 20
  - COLOR** Select the HLC area color  
▶ BLK,WHT,YEL,CYN,GRN,MAG,RED,BLU
- 2) **BLC** Prevents such a back light effect to secure a clear image under All illumination environments.  
Adjust the position & size of Back Light Compensation area.
  - H-POS** Adjust the BLC area window horizontal position ▶ 0 - 26
  - V-POS** Adjust the BLC area window vertical position ▶ 0 - 24
  - H-SIZE** Adjust the BLC area window horizontal size ▶ 0 - 26
  - V-SIZE** Adjust the BLC area window vertical size ▶ 0 - 24
- 3) **WDR** Expands the dynamic range light effect to secure a clear image under All illumination environments.

- WDR MODE** Select the WDR mode ▶ LINE, FRAME
- ROI MODE** Select the WDR area  
▶ OFF, BOX (Window Zone, Position, Size)
- WEIGHT** Adjust the WDR level ▶ 0~10

### <BACK LIGHT> Mode



## DAY&NIGHT

The DAY&NIGHT menu is used to configure the day and night related. setting for the camera.

### 1) EXTERN

- IR LED** Turn on/off IR LED  FULL, OFF
- ANTI-SAT.** Adjust levels of Anti-Saturation ▶ 0 - 20
- EXTERN SW** Adjust levels of External sensor  LOW, HIGH
- D>N THRES** Adjust levels of transition  0 - 20
- N>D THRES** Adjust levels of transition ▶ 0 - 20
- DELAY** Adjust time of D&N change ▶ LOW, MIDDLE, HIGH

### 2) AUTO

- D>N THRES** Adjust levels of transition  0 - 20
- N>D THRES** Adjust levels of transition ▶ 0 - 20
- DELAY** Adjust time of D&N change ▶ LOW, MIDDLE, HIGH

AUTO mode are changed according to the brightness of the image. Use only when the camera is installed in a dark place but the camera is viewing a bright place. When used in a normal installation, hunting may occur.

### 3) COLOR

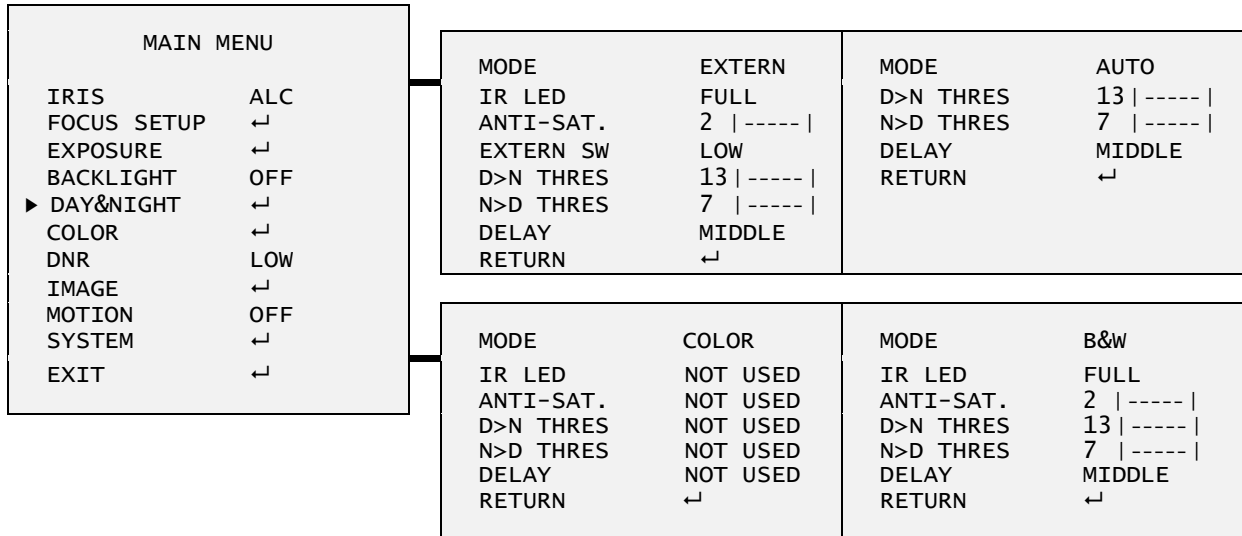
### 4) B&W

- IR LED** Turn on/off IR LED  FULL, OFF
- ANTI-SAT.** Adjust levels of Anti-Saturation ▶ 0 - 20
- D>N THRES** Adjust levels of transition  0 - 20
- N>D THRES** Adjust levels of transition ▶ 0 - 20

## DELAY

Adjust time of D&N change ► LOW, MIDDLE, HIGH

### <DAY & NIGHT> Mode



## COLOR

The screen color can be adjusted by using the Color function.

It compensates for deviations in the white color caused by changes in the color temperature of the light source so that the colors are reproduced correctly.

### 1)AUTO

Automatically adjust indoor color temperature.

**COLOR GAIN** Adjust the COLOR GAIN level. ► 0 - 20

### 2)AUTOext

Automatically adjust outdoor color temperature.

**COLOR GAIN** Adjust the COLOR GAIN level. ► 0 - 20

### 3)PRESET

Automatically readjust only by pressing.

**COLOR GAIN** Adjust the COLOR GAIN level. ► 0 - 20

### 4)MANUAL

Manual mode.

User can change Color Temp. Red and Blue gain value manually.

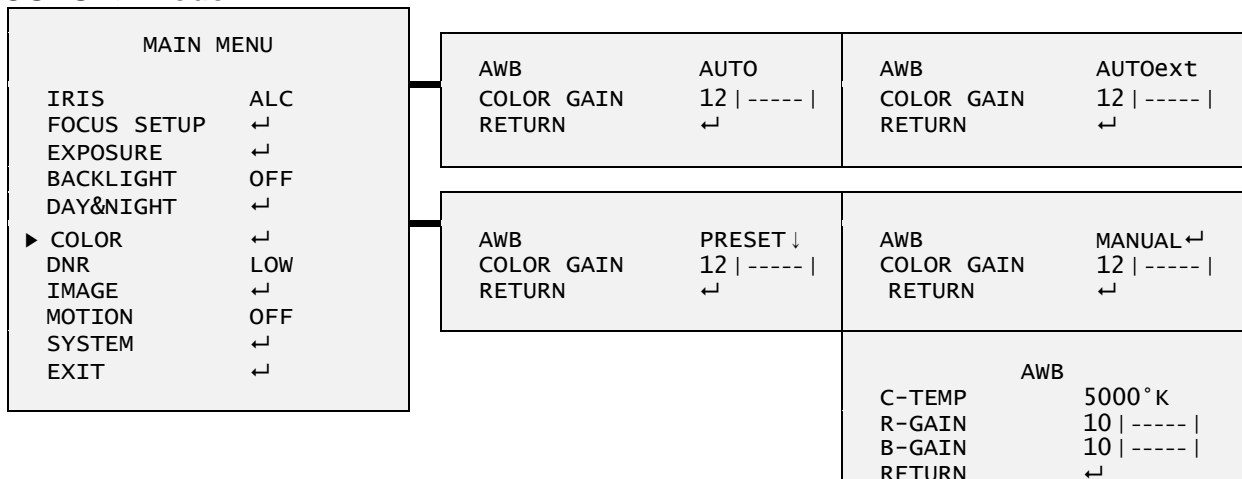
**C-TEMP** 3000°K, 5000°K, 8000°K

**R-GAIN** 0 ~ 20

**B-GAIN** 0 ~ 20

**COLOR GAIN** Adjust the COLOR GAIN level. ► 0 - 20

### <COLOR> Mode



## DNR

The IMAGE menu provides the ability to adjust the DNR functions of the camera.

- 1) **DNR** Select Digital Noise Reduction. ► OFF, LOW, MIDDLE, HIGH

### <DNR> Mode

MAIN MENU	
IRIS	ALC
FOCUS SETUP	↵
EXPOSURE	↵
BACKLIGHT	OFF
DAY&NIGHT	↵
COLOR	↵
► DNR	LOW
IMAGE	↵
MOTION	OFF
SYSTEM	↵
EXIT	

## IMAGE

The IMAGE menu provides the ability to adjust the SHARPNESS, GAMMA, MIRROR, FLIP, D-ZOOM, D-WDR, DEFOG, SHADING and PRIVACY functions of the camera.

- 1) **SHARPNESS** Adjust the SHARPNESS level. ► 0 - 10
- 2) **GAMMA** Select the gamma level ► 0.45, 0.55, 0.65, 0.75
- 3) **MIRROR** Select mirror mode ► ON, OFF
- 4) **FLIP** Select flip mode ► ON, OFF
- 4) **D-ZOOM** Select Digital ZOOM mode ► 1.0x ~ 16.0x
- 6) **D-WDR** Select the Digital WDR mode ► OFF, LOW, MIDDLE, HIGH
- 7) **DEFOG** Select the DEFOG mode. ► OFF, ON  
**MODE** ► AUTO, MANUAL  
**LEVEL** ► LOW, MIDDLE, HIGH
- 8) **SHADING** Select the Lens Shading Compensation. ► OFF, ON  
**WEIGHT** ► 0% ~ 100%
- 9) **PRIVACY** Hide an area you want to hide on the screen ► BOX, POLYGON

### [BOX Mode]

- ZONE NUM** Select the privacy zone ► AREA0 - AREA15
- ZONE DISP** Select the privacy zone display ► OFF, ON
- H-POS** Select the privacy zone horizontal position ► 0 - 80
- V-POS** Select the privacy zone vertical position ► 0 - 46
- H-SIZE** Select the privacy zone horizontal size ► 0 - 80
- V-SIZE** Select the privacy zone vertical size ► 0 - 46
- Y LEVEL** Select the privacy zone darkness ► 0 - 20
- CB LEVEL** Select the privacy zone blue color ► 0 - 20
- CR LEVEL** Select the privacy zone red color ► 0 - 20

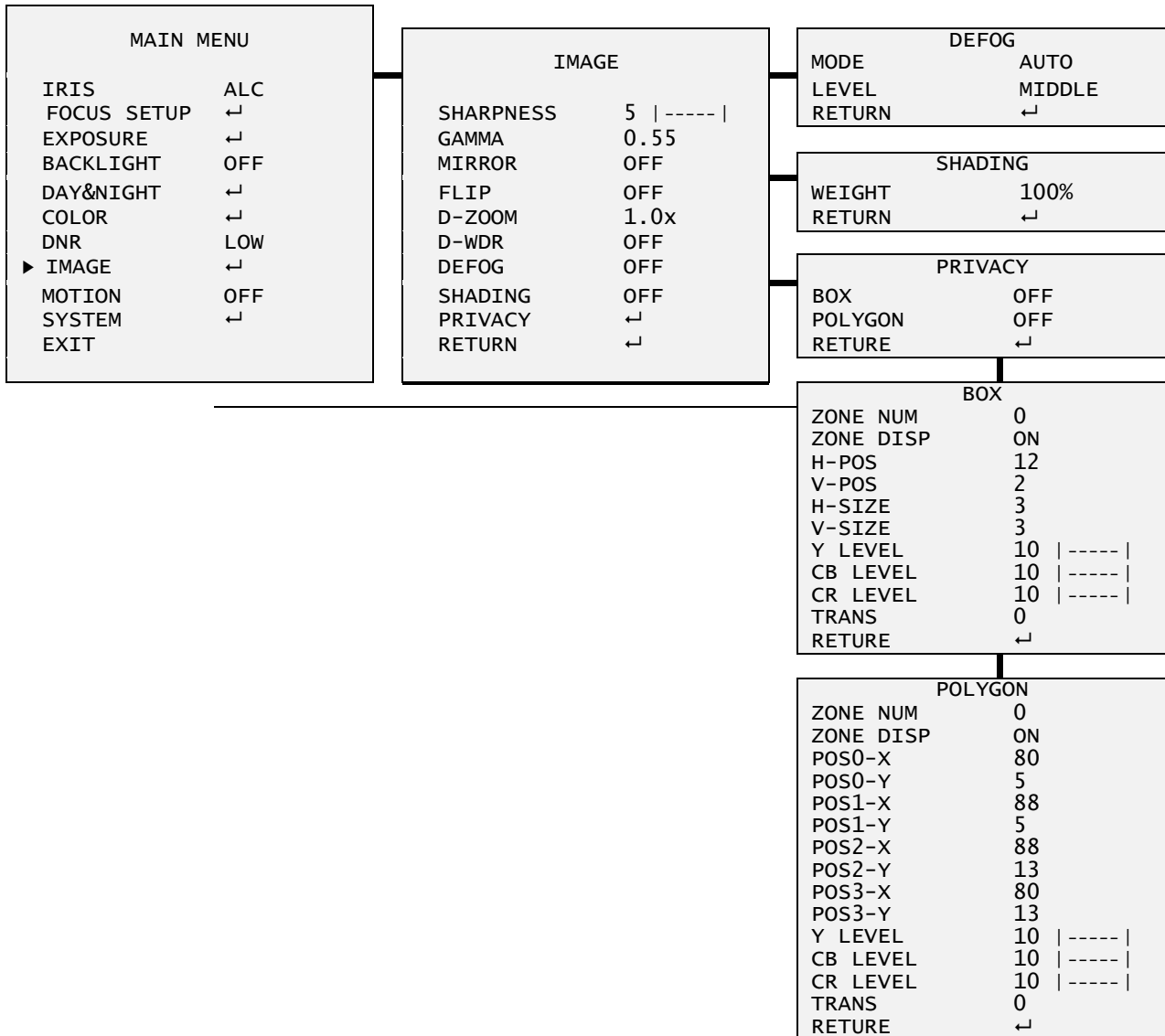
**TRANS**

Select the privacy zone transparency ▶ 0 - 3

**[POLYGON Mode]**

- ZONE NUM** Select the privacy zone ▶ AREA0 – AREA7
- ZONE DISP** Select the privacy zone display ▶ OFF, ON
- POS0-X** Select the privacy zone left-up X-Axis position ▶ 0 - 160
- POS0-Y** Select the privacy zone left-up Y-Axis position ▶ 0 - 91
- POS1-X** Select the privacy zone right-up X-Axis position ▶ 0 - 160
- POS1-Y** Select the privacy zone right-up Y-Axis position ▶ 0 - 91
- POS2-X** Select the privacy zone left-down X-Axis position ▶ 0 - 160
- POS2-Y** Select the privacy zone left-down Y-Axis position ▶ 0 - 91
- POS3-X** Select the privacy zone right-down X-Axis position ▶ 0 - 160
- POS3-Y** Select the privacy zone right-down Y-Axis position ▶ 0 - 91
- Y LEVEL** Select the privacy zone darkness ▶ 0 - 20
- CB LEVEL** Select the privacy zone blue color ▶ 0 - 20
- CR LEVEL** Select the privacy zone red color ▶ 0 - 20
- TRANS** Select the privacy zone transparency ▶ 0 - 3

**<IMAGE> Mode**





## MOTION

The MOTION menu provides the ability to adjust the MOTION functions of the camera.

- 1) MOTION** Detects the motioned object in the image. ▶ ON, OFF
- DET WINDOW** Select the motion area ▶ WINDOW ZONE, WINDOW USE, POSITION, SIZE
- SENSITIVITY** Adjust the motion sensitivity level ▶ 0 - 10
- MOTION OSD** Select the motion OSD ▶ ON, OFF
- TEXT ALARM** Select the motion text display ▶ ON, OFF
- SIGNAL OUT** Select the motion signal out ▶ ON, OFF

### <MOTION> Mode

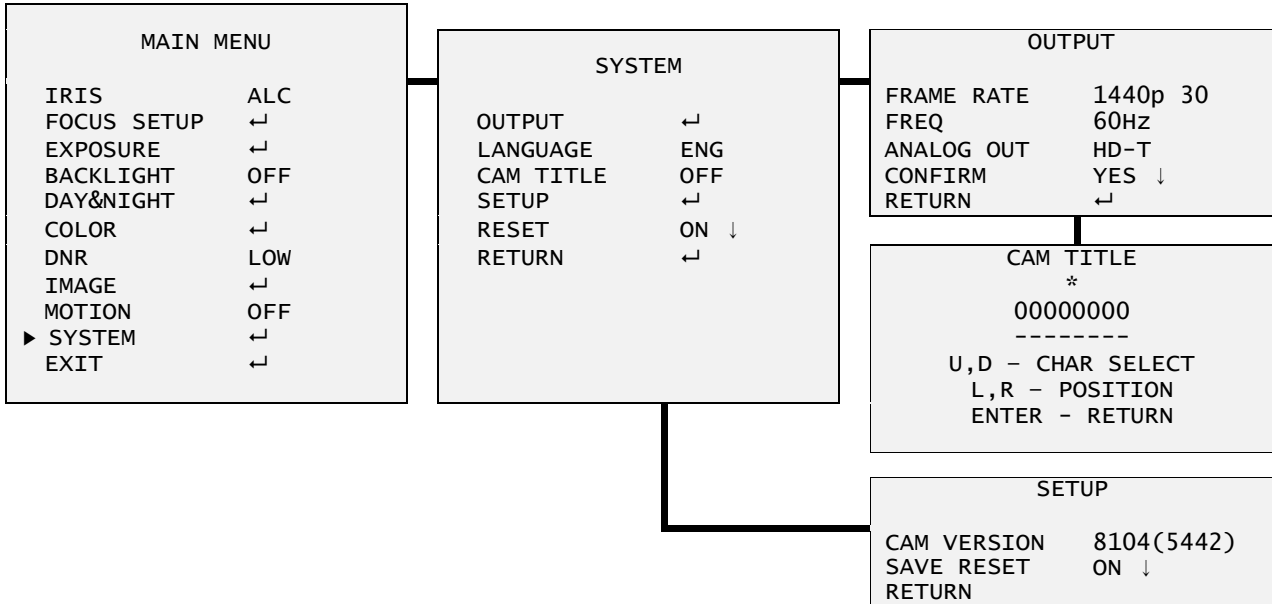
MAIN MENU		MOTION	DET WINDOW
IRIS	ALC	DET WINDOW	WINDOW ZONE 0
FOCUS SETUP	↵	SENSITIVITY	WINDOW USE ON
EXPOSURE	↵	MOTION OSD	DET H-POS 1
BACKLIGHT	OFF	TEXT ALARM	DET V-POS 1
DAY&NIGHT	↵	RETURN	DET H-SIZE 78
COLOR	↵		DET V-SIZE 43
DNR	LOW		RETURN
IMAGE	↵		
▶ MOTION	OFF		
SYSTEM	↵		
EXIT	↵		

## SYSTEM

The SYSTEM menu provides the ability to adjust the OUTPUT, LANGUAGE, CAM TITLE, SETUP and RESET functions of the camera.

- 1) OUTPUT** Select the output mode and control.
  - FRAME RATE** Select the frame rate ▶ 1440p 30(25), 1080p 30(25)
  - FREQ** Select the frequency ▶ 60HZ, 50HZ
  - ANALOG OUT** Select the output mode ▶ HD-A(AHD), HD-T(TVI)
- 2) LANGUAGE** Select the OSD menu LANGUAGE
  - ▶ ENG, CHN, CHN(S), JPN, KOR
- 3) CAM TITLE** Select the camera title maximum of 8 characters are allowed.
  - ▶ RIGHT UP, LEFT UP
- 5) SETUP** Setting the camera version.
  - CAM VERSION** Select the camera version
  - SAVE RESET** Save the user setting value
- 6) RESET** Factory initialization of camera settings

## <SYSTEM> Mode



## DC AUTO IRIS LENS

Image Size	1/2.8" CMOS
Focal Length	2.7-12mm
Aperture Ratio	F1.6(Wide) ~ 2.9(Tele)
Angular Field of View	DIAGONAL 2.8mm : 130° 12mm : 37°

## SPECIFICATION

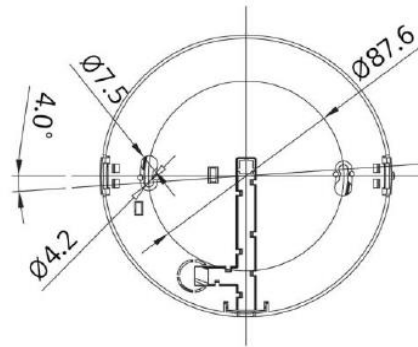
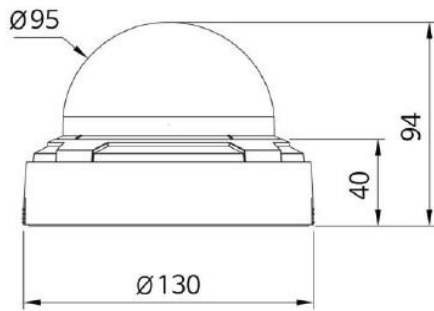
MODEL		4M HD-Hybrid WDR Vandal Dome CAMERA
Power	Power Source	AC24V ± 10% / DC12V ± 10%
	Power Consumption	Max 7.2 Watts (600mA)
General	Image Sensor	1/2.8" 5M Sony CMOS
	Total Pixels	2704(H) x 2104(V)
	Active Pixels	2608(H) x 1960(V)
	Scanning System	16:9 Progressive
	Sync. System	Internal
	Video Frame Rate	2560 × 1440p@30 fps ; 2560 × 1440p@25 fps
	CVBS Resolution	700TVL
	Min. illumination	0.03 lux(COLOR) / 0 lux(BW, IR LED ON)
Video Output	BNC 1 (TVI / HD-A Selectable) / BNC 2 (CVBS)	

	IR	IR LED	28ea IR LEDs (850nm)
		DISTANCE	30M
	Camera Control		OSD Menu (Joystick Switch, coaxial control)
	S/N Ratio		More than 52dB (AGC off)
Function	Lens		DC(ALC) / MANUAL(ELC)
	Exposure	Shutter	AUTO / FLCKER / MANUAL(1/30(25)~1/30,000 sec
		AGC	1 ~ 10
		Sens-UP	OFF / x2/ x4/ x8/ x16/ x32
		Brightness	1 ~ 20
	Backlight		OFF / HLC / BLC / WDR
	White Balance		AUTO(Indoor) / AUTOext(Outdoor) / PRESET / MANUAL
	Day & Night		AUTO / COLOR / B&W / EXTERN
	DNR		OFF / LOW / MIDDLE / HIGH
	Image	Color Gain	0 ~ 20
		Sharpness	0 ~ 20
		Mirror	OFF / ON
		Gamma	0.45 / 0.55 / 0.65 / 0.75
		Flip	OFF / ON
		D-WDR	OFF / ON
		Defog	OFF / ON (MANUAL/AUTO)
		Privacy Masking	OFF / ON (BOX 16 zone, Polygon 8 zone)
		Motion	OFF / ON (4 zone)
		Language	ENG / CHN / CHN(S) / JPN / KOR
		Video mode	60Hz (NTSC) / 50Hz (PAL)
	Focus Setup	AF Mode	ONE SHOT / MANUAL
		TDN AF	OFF / ON
		Lens Initialize	Enter
EXIT		EXIT (Auto Save)	
Connector & ETC	Power input		Terminal Block
	Video output		BNC 1 Connector (TVI/HD-A) / BNC 2 Connector (CVBS)
	Transmission Distance		Over 500m via 5C-2V coaxial cable
	Lens mount		Fixed mount
	Lens		2 Motor, f=2.7~12mm F1.6~2.9 Varifocal, ICR (D&N)
	Operating temperature		14°F ~ 122°F (-10℃ ~ +50℃)
	Operating humidity		0 ~ 96% (non-condensing)
	External dimension		Φ 130 x 94 mm(H)
	Weight		300g

\* Specifications are subject to change without notice \*

# EXTERNAL DIMENSION

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Dimensions Unit: mm



**CDT4H12IFW**  
**HD DOME CAMERA**

5030xxxxA