**INSTRUCTION MANUAL** 

# CBT4H12IFW HD BULLET 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 IN STRUCTIONS 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

INTRODUCTION	6
CAMERA CONNECTION	7
LENS ADJUSTMENT	7
CONTENTS OF PACKAGE	8
INSTALLATION	9
STRUCTURE OF THE SETUP MENU 1	10
DC AUTO IRIS LENS	18
SPECIFICATIONS	18
EXTERNAL DIMENSION	20

## INSTRUCTION

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

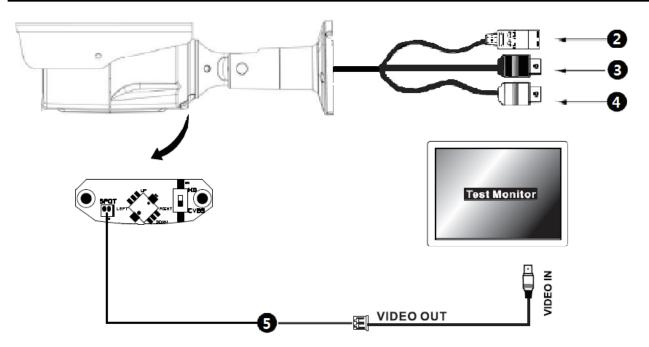
#### Features:

- High performance SONY 1/2.8" 5M STARVIS CMOS<sup>™</sup>
- Min. illumination 0.03 lux(Color), 0 lux(BW, IR LED ON)
- Auto electronic shutter  $[1/30(1/25) \sim 1/30,000]$  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 40M
- 35EA, 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



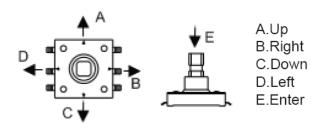
**IMPORTANT** : The user of this camera is responsible for checking and complying with local, state, and federal laws and statutes concerning the recording and monitoring of audio signals.

## **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±1 0%, 60/50Hz±1Hz Use Certified/Listed Class 2 power source only. DC 12V Type => DC 12V±10% (12VDC is polarity dependent)
   \*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.

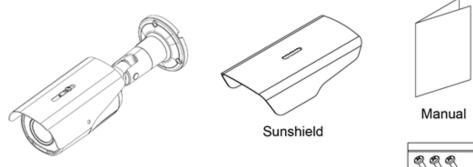
# **CONTENTS OF PACKAGE**

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:

- 1. Camera in housing
- 2. Sunshield
- 3. Sunshield Bolt
- 4. This manual
- 5. Accessory kit for installing
- 6. Drilling guide label



Camera

Sunshield Bolt

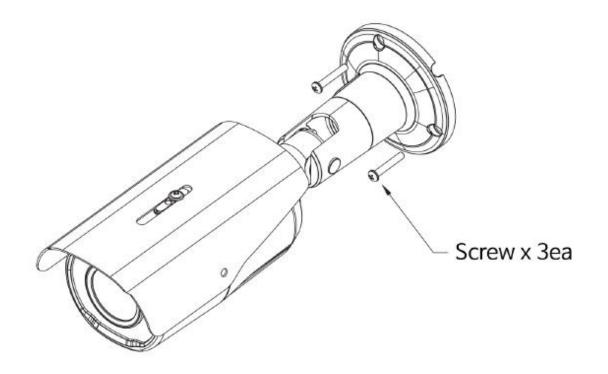
Accessory



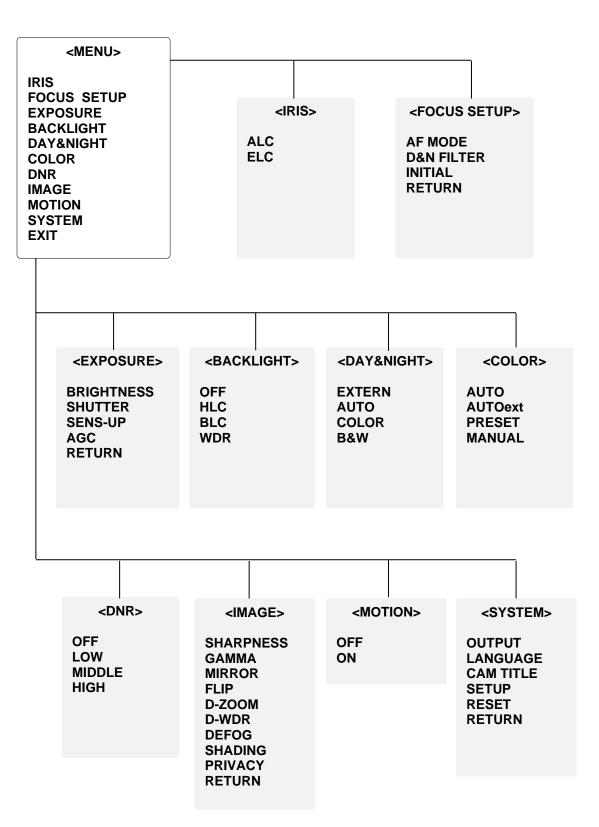
Drilling Guide Label

# INSTALLATION

To mount the bullet camera, fix the base of the camera with the three screws provided in the accessory kit.



## STRUCTURE OF THE SETUP MENU



### 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

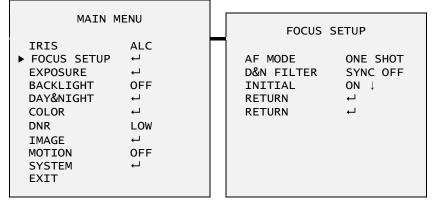
▶ IRIS       ALC         FOCUS SETUP       ↓         EXPOSURE       ↓         BACKLIGHT       OFF         DAY&NIGHT       ↓         COLOR       ↓         DNR       LOW         IMAGE       ↓         MOTION       OFF         SYSTEM       ↓         EXIT       ↓

### 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



### 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.

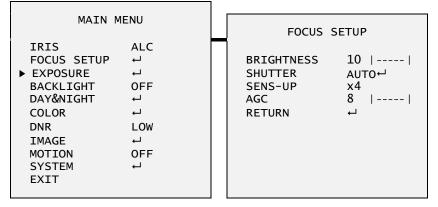
1) BRIGHTNESS Adjust the BRIGHTNESS level. > 0 - 20

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  $\triangleright$  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.

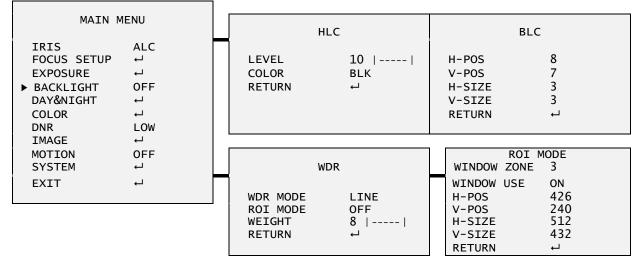
WDR MODE ROI MODE

Select the WDR mode ► LINE, FRAME 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

FOCUS SETUP ← EXPOSURE ← BACKLIGHT O DAY&NIGHT ← COLOR ← DNR L	NLC	MODE IR LED ANTI-SAT. EXTERN SW D>N THRES N>D THRES DELAY RETURN	EXTERN FULL 2    LOW 13   7    MIDDLE ↓	MODE D>N THRES N>D THRES DELAY RETURN	AUTO 13   7    MIDDLE ↓
IMAGE ← MOTION O SYSTEM ← EXIT ←		MODE IR LED ANTI-SAT. D>N THRES N>D THRES DELAY RETURN	COLOR NOT USED NOT USED NOT USED NOT USED ↓	MODE IR LED ANTI-SAT. D>N THRES N>D THRES DELAY RETURN	B&W FULL 2    13   7    MIDDLE ↓

### 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.					
	<b>COLOR GAIN</b> Adjust the COLOR GAIN level. ▶ 0 - 20					
2)AUTOext	Automatically adjust outdoor color temperature.					
	<b>COLOR GAIN</b> Adjust the COLOR GAIN level. > 0 - 20					
3)PRESET	Automatically readjust only by pressing.					
	<b>COLOR GAIN</b> Adjust the COLOR GAIN level. ▶ 0 - 20					
4)MANUAL	Manual mode.					
	User can change Color Temp. Red and Blue gain value manually.					
	<b>C-TEMP</b> 3000°K, 5000°K, 8000°K					
	<b>R-GAIN</b> 0 ~ 20					
	<b>B-GAIN</b> 0 ~ 20					
	<b>COLOR GAIN</b> Adjust the COLOR GAIN level. > 0 - 20					

#### <COLOR> Mode

MAIN MENU		Г				
IRIS FOCUS SETUP EXPOSURE	ALC イ イ		AWB COLOR GAIN RETURN	AUTO 12     ↓	AWB COLOR GAIN RETURN	AUTOext 12     ~
BACKLIGHT	OFF	-				
DAY&NIGHT	сJ					
<ul> <li>COLOR DNR IMAGE MOTION</li> </ul>	ィ LOW ィ OFF		AWB COLOR GAIN RETURN	PRESET↓ 12     ↓	AWB COLOR GAIN RETURN	MANUAL↩ 12     ↩
SYSTEM	<b>↓</b>				41/2	
EXIT	<b>↓</b>				AWB C-TEMP	5000°ĸ
					R-GAIN B-GAIN RETURN	10     10     ↓

### 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 FOCUS SETUP EXPOSURE BACKLIGHT DAY&NIGHT COLOR DNR IMAGE MOTION SYSTEM EXIT	ALC J J FF J LOU J FF J						

### 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.

<ol> <li>1) SHARPNESS</li> <li>2) GAMMA</li> <li>3) MIRROR</li> <li>4) FLIP</li> <li>4) D-ZOOM</li> <li>6) D-WDR</li> <li>7) DEFOG</li> </ol>	Adjust the SHARPNESS level. ► 0 - 10 Select the gamma level ► 0.45, 0.55, 0.65, 0.75 Select mirror mode ► ON, OFF Select flip mode ► ON, OFF Select Digital ZOOM mode ► 1.0x ~ 16.0x Select the Digital WDR mode ► OFF, LOW, MIDDLE, HIGH Select the DEFOG mode. ► OFF, ON MODE ► AUTO, MANUAL LEVEL ► LOW, MIDDLE, HIGH			
8) SHADING		ns Shading Compensation. ► OFF, ON		
	WEIGHT <b>&gt;</b> 0	VEIGHT ▶ 0% ~ 100%		
9) PRIVACY	Hide an area	Hide an area you want to hide on the screen ► BOX, POLYGON		
[BOX Mode]	Hide an area you want to hide on the screen $\blacktriangleright$ BOX, POLYGOZONE NUM ZONE DISPSelect the privacy zone $\blacktriangleright$ AREA0 - AREA15 Select the privacy zone display $\blacktriangleright$ OFF, ON Select the privacy zone horizontal position $\blacktriangleright$ 0 - V-POSH-POS V-POS H-SIZE V-SIZE Y LEVEL CB LEVEL CR LEVELSelect the privacy zone horizontal size $\triangleright$ 0 - 46 Select the privacy zone vertical size $\triangleright$ 0 - 46 Select the privacy zone darkness $\triangleright$ 0 - 20 Select the privacy zone red color $\triangleright$ 0 - 20			

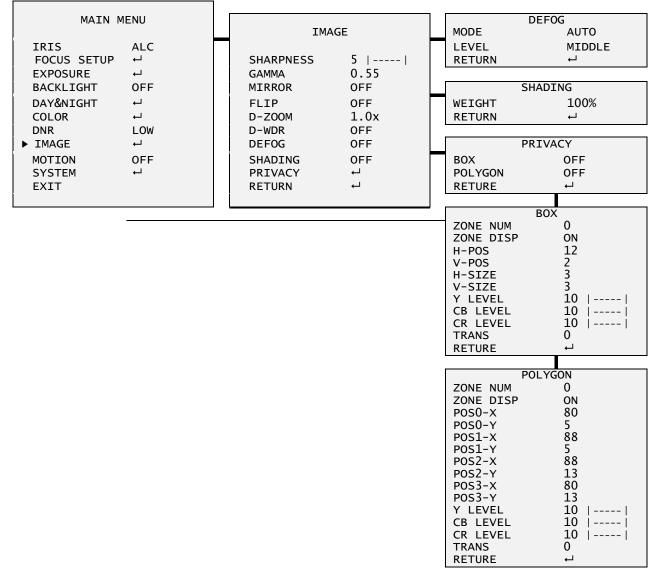
Select the privacy zone transparency ▶ 0 - 3

#### [POLYGON Mode]

TRANS

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 $\blacktriangleright$ 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		MOTI	ON	DET WI	NDOW	
IRIS FOCUS SETUP EXPOSURE BACKLIGHT DAY&NIGHT COLOR DNR	ALC T OFF T LOW	DET WINDOW SENSITIVITY MOTION OSD TEXT ALARM RETURN	↩ 5    OFF OFF ↩	WINDOW ZONE WINDOW USE DET H-POS DET V-POS DET H-SIZE DET V-SIZE RETURN	0 ON 1 78 43 4	
IMAGE ► MOTION SYSTEM	ਦ OFF ਦ					_

#### SYSTEM

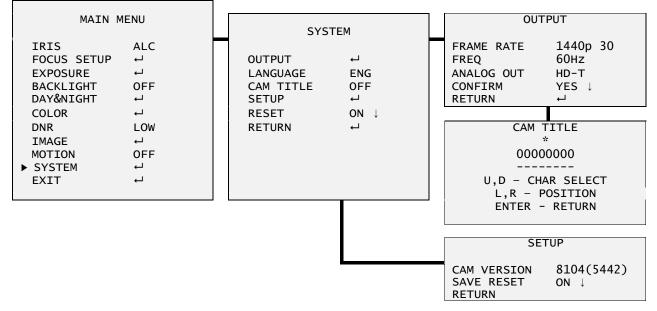
EXIT

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

1) OUTPUT FRAME RATE FREQ ANALOG OUT	Select the output mode and control. Select the frame rate  1440p 30(25), 1080p 30(25) Select the frequency  60HZ, 50HZ Select the output mode HD-A(AHD), HD-T(TVI)			
2) LANGUAGE	Select the OSD menu LANGUAGE			
3) CAM TITLE	<ul> <li>ENG, CHN, CHN(S), JPN, KOR</li> <li>Select the camera title maximum of 8 characters are allowed.</li> <li>RIGHT UP, LEFT UP</li> </ul>			
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	DIAGONAL
Field of View	2.8mm : 130º
	12mm : 37º

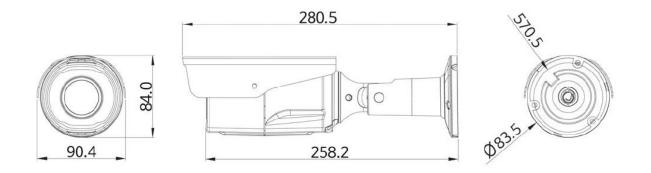
## **SPECIFICATION**

MODEL		4M HD-Hybrid WDR IR Bullet CAMERA
Davian	Power Source	AC24V ± 10% / DC12V ± 10%
Power	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	35ea IR LEDs (850nm)
			DISTANCE	40M
	Camera Control			OSD Menu (Joystick Switch, coaxial control)
	S/N Ratio			More than 52dB (AGC off)
	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
		Color Gain		0 ~ 20
		Sharpness		0 ~ 20
- <i>.</i> .		Mirror		OFF / ON
Function		Gamma		0.45 / 0.55 / 0.65 / 0.75
	Image	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-condencing)
	External dimension			90.4(W) x 84(H) x 280.5 mm(D)
1 1	Weight			

\* Specifications are subject to change without notice \*

## **EXTERNAL DIMENSION**





## CBT4H12IFW HD BULLET CAMERA 5030xxxA

