

HIGH PERFORMANCE BULLET CAMERA

OPERATION MANUAL



Before attempting to connect or operate, please read and follow these instructions.

COMPONENTS

Bullet Camera	
Mounting Bracket	
Mounting Screw 3ea	
Power Pigtail Cable	
Operation Manual	

CAUTIONS

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.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note -

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.

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.

Caution -

Do not make any changes to the housing or internal parts. This could void the FCC certification and may void the warranty.

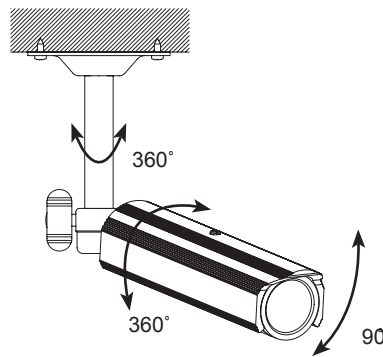
CAUTION

1. If DC power is used regulated DC12V 500mA power supply is recommended for use with this camera for the best picture and the most stable operation.

An unregulated power supply may cause damage to the camera.

1. It is recommended that the camera is used with a monitor that has a CCTV quality 75Ω video impedance level. If your monitor or other equipment is switched to high impedance then please adjust accordingly.
2. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to the manufacturer.
3. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
4. Do not remove the serial number sticker.

MOUNTING POSITION



CAUTIONS

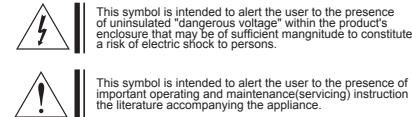
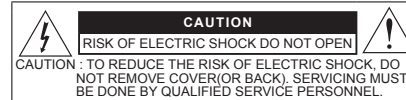
Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with separate collection systems)

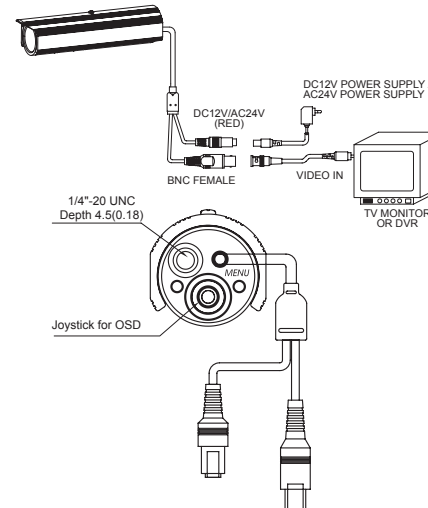
This marking shown on the product or its literature, indicate that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

This product should not be mixed with other commercial wastes purchased this product, or their local government office, for details of where and how they can take item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. Household users should contact either the retailer where they for disposal.



CONNECTION

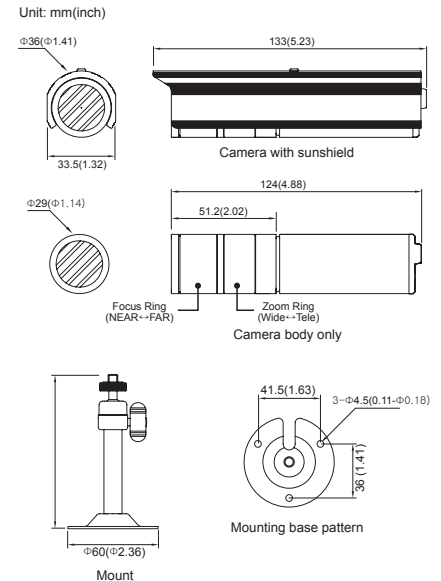


When you install the camera, please seal the ends of cables to protect the camera connections from humidity problems.

FEATURES

- **1/3" Sony Super-HAD CCD II**
 Minimum illumination 0.00092 Lux
 (F1.2, 30 IRE, Sense-up X2556, AGC high) S/N Ratio 50dB
- **High Resolution 600TV Lines**
 This camera displays a high resolution of 600 TV Lines using sophisticated full digital image processing, 10 bit A/D serial signal processing and special algorithm technologies.
- **3D DNR (3D Digital Noise Reduction)**
 The DNR technology greatly reduces noise thus delivering a crisp and clear image
 This camera's DNR function utilizes an adaptive 3D Filter to reduce noise caused by movement and the environment.
- **DAY&NIGHT**
 The Day & Night operation feature an 'auto' mode which switches between color and B&W modes automatically based on the level of illumination in the scene. The COL OR mode operates during bright conditions to provide optimum colors while the B&W Mode operates during dark conditions to enhance the definition of the image. Or, the camera may be set to return a color image at all light levels.
- **Privacy Mask Function**
 The Privacy masking feature allows for the 'blanking' of specific areas in a scene where viewing or recording is prohibited or not desired.
- **OSD (On Screen Display)**
 This camera is easily configured with its OSD (On Screen Display) menu. The menu can be displayed in multiple languages.

DIMENSIONS



SPECIFICATION

Signal Format	NTSC	PAL
Image Device	1/3" Sony Super HAD CCD II	
Total Pixels	811(H) x 508(V) approx. 410K pixels	795(H) x 596(V) approx. 470K pixels
Effective Pixels	768(H) x 494(V) approx. 380K pixels	752(H) x 582(V) approx. 440K pixels
Inter. HV	15,734/59.94Hz	15,625/50Hz
H.Resolution	600TV Lines	
Minimum Illumination	0.00002 Lux / F1.2 (Sense-up)	
S/N Ratio	More than 50dB (AGC Off)	
Electronic Shutter	1/60 ~ 1/100,000 sec	1/50 ~ 1/100,000 sec
Manual Shutter	1/60(50), FLK, 1/250, 1/500, 1/2K, 1/5K, 1/10K, 1/100K X2, X4, X8, X16, X32, X64, X128, X256	
Sense-up	X2, X4, X8, X16, X32, X64, X128, X256 (8X Recommended)	
AGC	Off / Low / Middle / High	
White Balance	ATW / PUSH / PUSH-LOCK / MANUAL / INDOOR / OUTDOOR	
Sync System	Internal	
Privacy Zone	8 Zone	
Flickerless	OFF/ON	
Lens	varifocal (3.5 ~ 16.0mm)	
3DNR	Off / On (Plus Level setting)	
Motion Detection	4 Areas	
Language	English, French, Russian, German, Spanish, Dutch	
Additional DSP Functions	Mirror(H,V,HV), Digital Zoom, Freeze, Negative Image, BLC, D-WDR	
Video Output	CVBS	
Input Power Source	DC12V ±10% Max 170mA AC24V ±10% Max 1.8W	

OSD MANUAL

3. DAY&NIGHT

: Switching the output image from COLOR when in a bright environment to B&W when dark.

DAY & NIGHT AUTO	
DWELL TIME	10sec
D-N LEVEL	4
N-D LEVEL	6
RETURN	RET-]

- AUTO : Color or B/W mode auto change.

• DETECT MODE

• VIDEO : Select to detect mode as level of VIDEO.

• DWELL TIME :

Duration of continuous lighting condition (Bright or Dark) before switching mode.

(0-10 SEC).

• D>N LEVEL : The Level where the change occurs from COLOR(Day) to BW(Night).

• N>D LEVEL : The Level where the change occurs from BW(Night) to COLOR(Day).

- B/W : Image output is fixed at B&W.

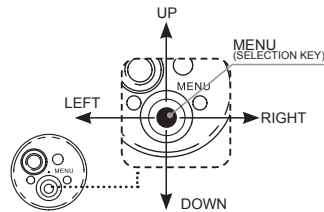
• BURST ON/OFF : Select the burst signal ON/OFF when Night condition.

- COLOR : Enables user to fix the output image in COLOR at all light levels.

OSD MANUAL

GENERAL STRUCTURE

SETUP MENU	
EXPOSURE	•SHUTTER •BRIGHTNESS •AGC •SENSE-UP •BLC •D-WDR
WHITE BAL	•ATW •PUSH •PUSH-LOCK •MANUAL •INDOOR •OUTDOOR
DAY&NIGHT	•COLOR •B/W •AUTO
IMAGE	•FREEZE •MIRROR •D-ZOOM •SHARPNESS •COLOR GAIN •GAMMA •NEG.IMAGE
3DNR	•LEVEL •RETURN
SPECIAL	•CAM TITLE •LANGUAGE •MOTION •PRIVACY
RESET	•FACTORY RESET
EXIT	



Press in on joystick for enter/select

OSD MANUAL

4. IMAGE

: Configurations for the following settings: FREEZE, MIRROR, D-ZOOM, SHARPNESS, COLOR GAIN, GAMMA, NEGATIVE IMAGE.

IMAGE	
FREEZE	OFF
MIRROR	ON-]
D-ZOOM	5
SHARPNESS	J
COLOR GAIN	0.45
GAMMA	OFF
NEG.IMAGE	OFF
RETURN	RET-]

- FREEZE : Freezes the output image(use requires real time access to the camera controls).

- MIRROR

- MIRROR : Output image is mirrored (Left to Right).
- V-FLIP : Output image is flipped vertically (Up and Down).
- ROTATION : Output image is rotated 180-degrees.

- D-ZOOM : Digitally Zooms in on a section of the screen.

- SHARPNESS : Sharpness of the output image can be adjusted.

- COLOR GAIN : RED GAIN or BLUE GAIN can be adjusted.

- GAMMA : Gamma value can be set.

- NEG.IMAGE : Output image is converted to a negative image.

5. 3DNR

: Three-dimensional Noise Reduction.

- LEVEL : The degree of noise reduction can be set.

3DNR	
LEVEL	50
RETURN	RET-]

OSD MANUAL

OSD FUNCTION DESCRIPTION

1. EXPOSURE

: Enables the user to configure the following functions: SHUTTER, AGC, SENSE-UP, BLC, D-WDR

EXPOSURE	
SHUTTER	AUTO
BRIGHTNESS	50
AGC	OFF
SENSE-UP	AUTO
BLC	BLC-]
D-WDR	OFF
RETURN	RET-]

- SHUTTER

- AUTO : Exposure is controlled automatically.
- FLK : Enable FLICKERLESS.

(NTSC: 1/100, PAL: 1/120)

• FIXED : Allow the shutter speed to be set manually.

> 1/60(50), 1/250, 1/500, 1/2K, 1/5K, 1/10K, 1/100K

(*) is for PAL TYPE

- BRIGHTNESS : AUTO Mode Only.

- AGC : Low, Middle, High.
*If AGC feature is turned off, 3D-DNR & SENSE-UP features will not be available.

- SENSE-UP : Slow shutter speed control (max of 8-16 recommended).

- BLC : Back Light Compensation.
• HSBC : Highlight Suppression BLC will darken bright parts of the image.

- D-WDR : Allows accurate display of images during high contrast lighting conditions.

OSD MANUAL

6. SPECIAL

: Configurations for the following settings: CAM TITLE, LANGUAGE, MOTION, PRIVACY.

SPECIAL	
CAM TITLE	OFF
LANGUAGE	ENGLISH
MOTION	ON-]
PRIVACY	ON-]
RETURN	RET-]

- CAMERA TITLE : Displays the title editing menu.

- LANGUAGE : The Language to display the OSD in, (English, Russian, Spanish, German, French, Dutch).

- MOTION : The camera will monitor the output image for motion and display a OSD icon upon detection.

• AREA SELECT : 4 areas can be selected for motion detection.

• AREA DISPLAY : Areas of motion detection can be toggled on and off

• LEFT/RIGHT : Moves the detection area left and right.

• WIDTH : The width of the detection area is set.

• TOP/BOTTOM : Moves the detection area up and down.

• HEIGHT : The height of the detection area is set.

• SENSITIVITY : Level of sensitivity for detecting motion is set.

• MOTION VIEW : Displays the areas of motion on the screen.

OSD MANUAL

2. WHITE BALANCE

: Enable the user to set the White Balance through controlling R,G,B Levels.

WHITE BAL MANUAL	
BLUE	24
RED	32
RETURN	RET-]

• ATW : White Balance is traced automatically through a wide range of color temperatures.

(2,500K ~ 9,500K)

• PUSH : White Balance is automatically adjusted for the current color temperature.

• P-LOCK : White Balance is Fixed to the current state. White Balance will be readjusted everytime this function is used.

• MANUAL : Enable the manual adjustment of RED GAIN and BLUE GAIN.

• INDOOR : White Balance is automatically adjusted at 3,200K base color temperature.

• OUTDOOR : White Balance is automatically adjusted at 5,400K base color temperature

OSD MANUAL

- PRIVACY : Up to 8 areas of the output image can be obscured.

- AREA SELECT : Select up to 8 areas.
- AREA DISPLAY : Displays the masked areas.
- LEFT/RIGHT : Moves the privacy area right and left.
- WIDTH : The width of the privacy area is set.
- TOP/BOTTOM : Moves the privacy area right and left up and down.
- HEIGHT : The height of the privacy area is set.
- COLOR : Color to use for the mask is set.

7. RESET

: Returns the camera to its factory default.

RESET	
FACTORY	RESET-]
RETURN	RET-]

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