

INSTRUCTION MANUAL

FULL 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. **Indoor use only.**
11. **This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" and rated from 12 Vdc, 500 mA.**



EXPLANATION OF GRAPHICAL SYMBOLS



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.



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 product.

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INTRODUCTION

The 1/2.9" 2.1M Full HD CMOS camera, especially for closed circuit television CCTV and security surveillance application.

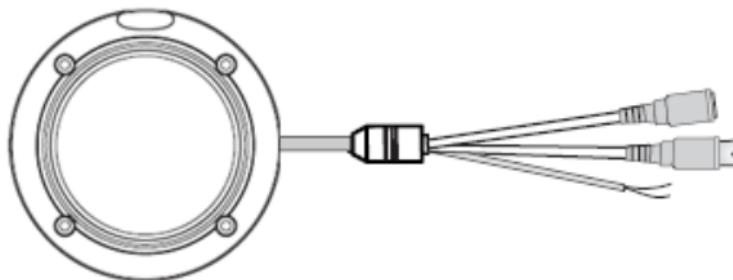
Features:

- High performance SONY 1/2.9" 2.1M EXMOR CMOS™
- 1.0 lux(Color), 0 lux(BW, IR LED ON)
- Auto electronic shutter [1/60(1/50) ~ 1/50,000] and manual electronic shutter modes
- 25/30 fps@ 1080p
- BLC (Back-light compensation)
- Auto and manual white balance modes (ATW/AWC/Manual/AWB)
- Day & Night (ICR) : Auto / Color / BW
- OSD (on screen display)
- 3 DNR (Digital Slow Shutter)
- DWDR
- Smart IR
- 24EA, 850nm IR LED
- IR Range distance up to 25M
- Privacy mask Function (4 zone)
- Motion Detection
- Defog
- HSBLC
- Operates in DC 12V ± 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 CONNECTIONS



- ① **Power** : 12V DC input, Use Certified/Listed Class 2 power source only.
* If using DC 12V power adaptor, use power supply capable of supplying 6 Watts.
- ② **Video** : BNC connector used to connect the camera to a DVR, etc.
- ③ **Switch Cable** : -Green & Black : open -> AHD signal BNC output
-Green & Black : short -> CVBS signal BNC output

CONTENTS OF PACKAGE

The package contents the following.

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

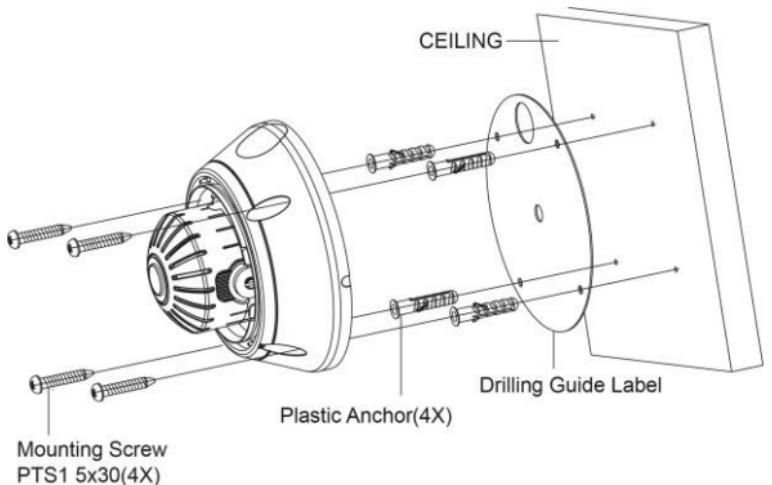
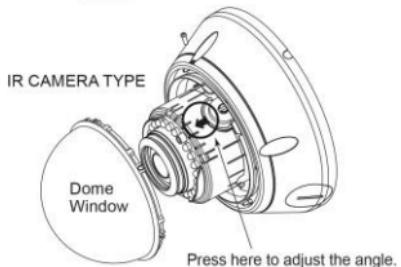
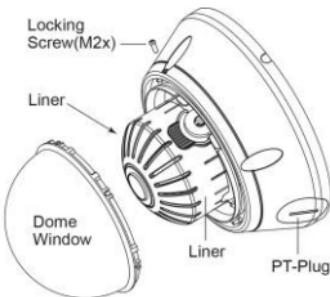
BASE INSTALLATION

1. Make mounting holes and cable hole in the place (ceiling or wall) to which this dome camera is installed using the Drilling guide label.

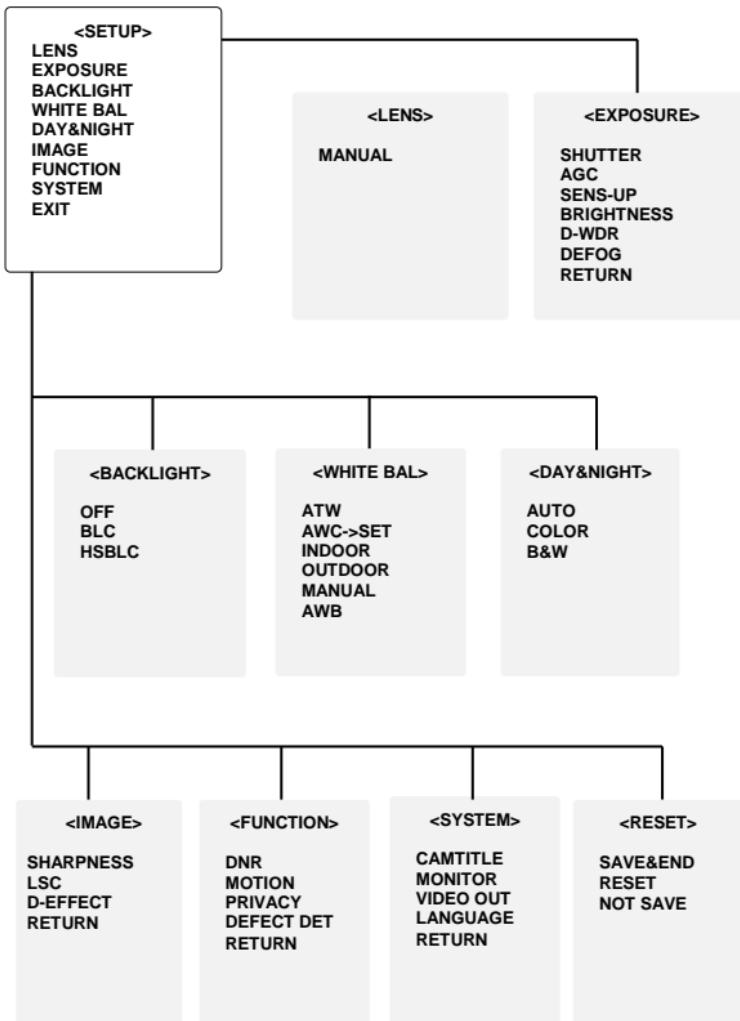
2. Drill the mounting location, using the Drilling guide.

3. Attach the housing to the ceiling using suitable fasteners, PTS1 5x30 screws are supplied only use if they are suitable.

4. Tighten a mounting screws.



STRUCTURE OF THE SETUP MENU



LENS

The LENS menu is used to set the Manual mode.

1) MANUAL Select the MANUAL mode

<LENS> Mode

MAIN MENU	
▶ LENS	MANUAL
EXPOSURE	↓
BACKLIGHT	OFF
WHITE BAL	ATW
DAY&NIGHT	AUTO↓
IMAGE	↓
FUNCTION	↓
SYSTEM	↓
EXIT	SAVE&END↓

EXPOSURE

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

1) SHUTTER Select the SHUTTER speed level.

▶ Auto, 1/60(50), FLK-1/240 – 1/50000, x2 ~ x30

2) AGC Adjust the Auto Gain Control level. ▶ OFF, Auto (x2 ~ x30)

3) SENS-UP Select the Digital Slow Shutter level. ▶ OFF, AUTO (x2 ~ x30)

4) BRIGHTNESS Adjust the BRIGHTNESS level. ▶ 0 ~ 100

5) D-WDR Select the Digital WDR. ▶ AUTO, ON(level 0~8), OFF

6) DEFOG Select the DEFOG mode. ▶ AUTO, ON(level 0~8), OFF

POS/SIZE Adjust the window position & size

GRADATION ▶ 0 ~ 2

DEFAULT Initialize the setting values

<EXPOSURE> Mode

MAIN MENU	
▶ EXPOSURE	MANUAL
BACKLIGHT	OFF
WHITE BAL	ATW
DAY&NIGHT	AUTO↓
IMAGE	↓
FUNCTION	↓
SYSTEM	↓
EXIT	SAVE&END↓

EXPOSURE	
SHUTTER	---
AGC	***** 14
SENS-UP	AUTO↓
BRIGHTNESS	***** 40
D-WDR	ON↓
DEFOG	OFF
RETURN	RET↓

SENS-UP	
SENS-UP	x2

D-WDR	
LEVEL	***** 5

DEFOG	
POS/SIZE	↓
GRADATION	***** 0
DEFAULT	↓
RETURN	RET↓

BACKLIGHT

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

1) BLC Prevents such a back light effect to secure a clear image under All illumination environments.

Adjust the size of Back Light Compensation area.

LEVEL Select the BLC gain ▶ Low, Middle, High

AREA Adjust the window position & size

DEFAULT Initialize the setting values

2) HSBLCLC Mask the high light zone with specific color & level.

SELECT Select the HSBLCLC area ▶ AREA1 - AREA4

DISPLAY Adjust the HSBLCLC area window position & size

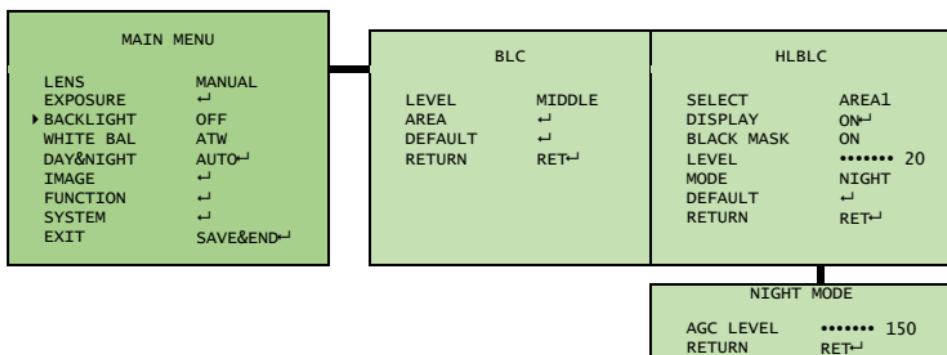
BLACK MASK Select the BLACK MASK ▶ ON, OFF

LEVEL Select the HSBLCLC level ▶ 0 ~ 100

MODE All Day, Night

DEFAULT Initialize the setting values.

<BACK LIGHT> Mode



WHITE BALANCE

The screen color can be adjusted by using the Auto White Balance 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) ATW Automatically adjust color temperature.

2) AWC->SET Automatically readjust only by pressing AWC→SET.

3) INDOOR Set the color temperature to 3200°K

4) OUTDOOR Set the color temperature to 6300°K

5) MANUAL Manual mode.

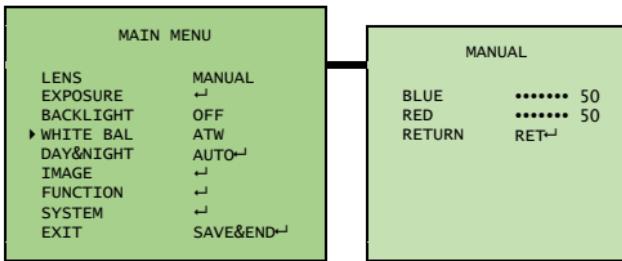
User can change Red and Blue gain value manually.

BLUE 0 ~ 100

RED 0 ~ 100

6) AWB Automatically extended range of color temperature adjustment.

<WHITE BALANCE> Mode



DAY&NIGHT

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

1) D&N AUTO

- Input Method CDS
- DAY&NIGHT Mode are changed according to the sensor inputs
- D&N LEVEL Adjust levels of transition ▶ 0 - 255
- N&D LEVEL Adjust levels of transition ▶ 0 - 255
- DELAY 1-60 SEC
- Input Method AGC

DAY&NIGHT mode are changed according to the brightness of the image.

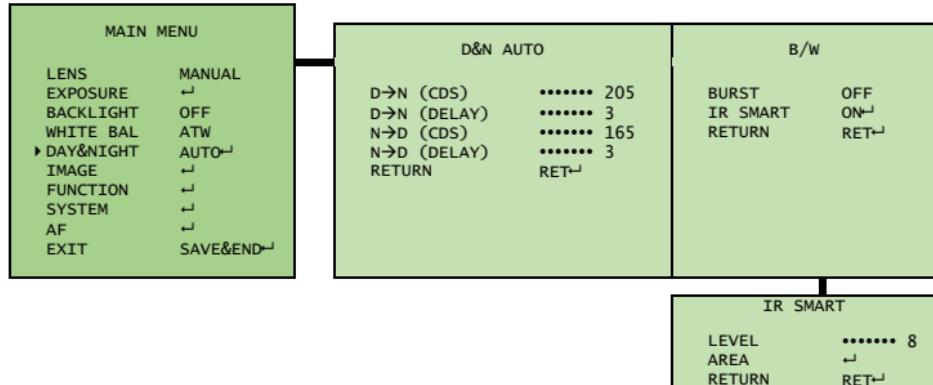
Use only when the camera is installed in a dark place but the camera is viewing a bright place.
When used in a normal installation, hunting may occur.

- D&N LEVEL Adjust levels of transition ▶ 0 - 255
- N&D LEVEL Adjust levels of transition ▶ 0 - 255
- DELAY 1-60 SEC

2) D&N B&W

- IR SMART LEVEL 1~15
- AREA Adjust the window position & size.

<DAY & NIGHT> Mode



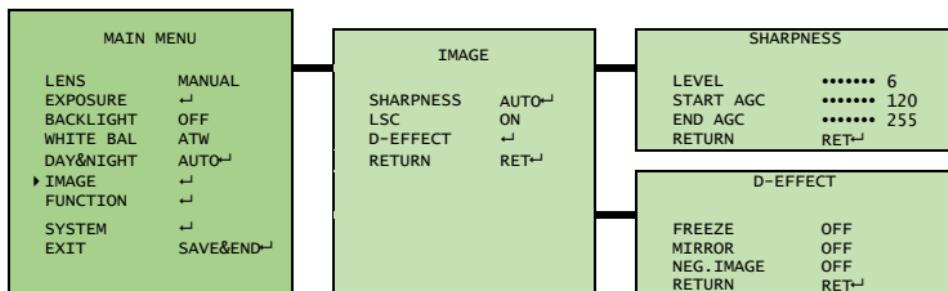
IMAGE

The IMAGE menu provides the ability to adjust the SHARPNESS, LSC and D-EFFECT functions of the camera.

- 1) SHARPNESS** Adjust the SHARPNESS level. ► OFF, AUTO (0 - 10)
- 2) LSC** Select the Lens Shading Compensation. ► ON, OFF
- 3) D-EFFECT**

FREEZE	Select real or still mode ► ON, OFF
MIRROR	Select OFF, MIRROR, V-FLIP, ROTATE
NEG. IMAGE	Select Negative image mode ► ON, OFF

<IMAGE> Mode



FUNCTION

The IMAGE menu provides the ability to adjust the DNR, MOTION, PRIVACY and DEFECT DET functions of the camera.

- 1) DNR** Select Digital Noise Reduction.

2D	► OFF, LOW, MIDDLE, HIGH
3D	► OFF, LOW, MIDDLE, HIGH
- 2) MOTION** Detects the Motioned Object in the image. ► ON, OFF

SELECT	Select the Motion area ► AREA1 - AREA4
DISPLAY	Adjust the Motion area window position & size
SENSITIVITY	Adjust the Motion sensitivity level ► 0 - 100
COLOR	Select the motion area color

TRANS	► WHITE - Red, Green, Blue Select the motion area transparency.
ALARM	► 1.0, 0.75, 0.5, 0.25 Select the Motion alarm
VIEW TYPE	Select view type of the Motion area ► OFF, BLOCK, OUTLINE, ALL
OSD VIEW	Select the Motion OSD view ► OFF, ON
TIME	Select the Motion Alarm time ► 1 - 15
DEFAULT	Initialize the setting values

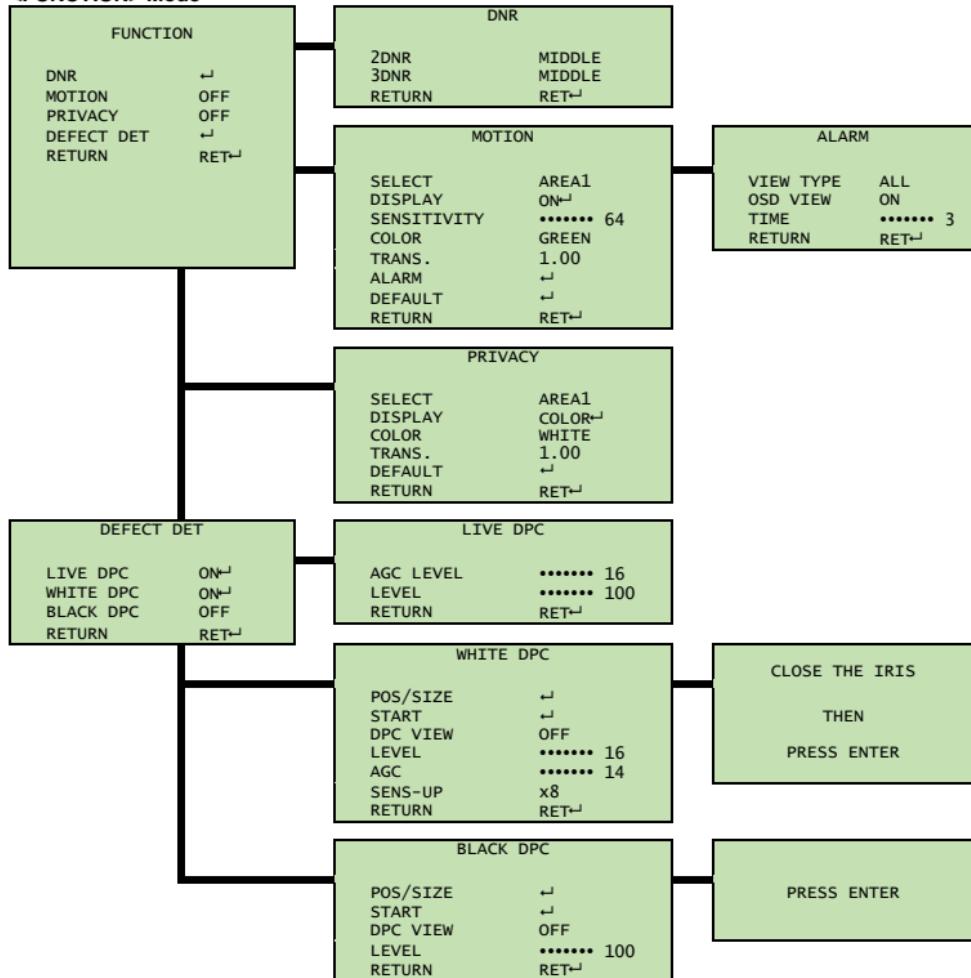
3) PRIVACY Hide an area you want to hide on the screen.

SELECT	Select the privacy zone ► AREA1 - AREA4
DISPLAY	Adjust the Privacy window type, position & size ► OFF, INV., MOSAIC, COLOR
COLOR	Select the privacy zone color ► WHITE - USER
TRANS	Select the privacy zone transparency ► 1.0, 0.75, 0.5, 0.25
DEFAULT	Initialize the setting values

4) DEFECT DET Compensates for bad pixels.

LIVE DPC	Select the Live DPC mode ► OFF, ON
AGC LEVEL	Select the AGC level ► 0 - 255
LEVEL	Select the Live DPC level ► 0 - 100
WHITE DPC	Select the White DPC mode ► OFF, ON
POS/SIZE	Adjust the White DPC area window position & size
START	Start the white pixels correction
DPC VIEW	► OFF, ON
LEVEL	Select the White DPC level ► 0 - 60
AGC	Select the AGC Level ► 0 - 14
SENS-UP	Select the Sens-up level ► x2 - x30
BLACK DPC	Select the Black DPC mode ► OFF, ON
POS/SIZE	Adjust the Black DPC area window position & size
START	Start the Black pixels correction
DPC VIEW	► OFF, ON
LEVEL	Select the Black DPC level ► 0 - 100

<FUNCTION> Mode



SYSTEM

The SYSTEM menu provides the ability to adjust the CAM TITLE, MONITOR, CVBS CROP, VIDEO OUT, LANGUAGE and VERSION functions of the camera.

1) CAM TITLE Maximum of 15 characters are allowed.

2) MONITOR Select the Monitor type ► LCD, CRT

LCD

BLUE GAIN Adjust the Blue gain level ► 0 - 100

RED GAIN Adjust the Red gain level ► 0 - 100

GAMMA Select the gamma level ► USER, 0.45 - 1.0

CRT

BLUE GAIN Adjust the Blue gain level ► 0 - 100

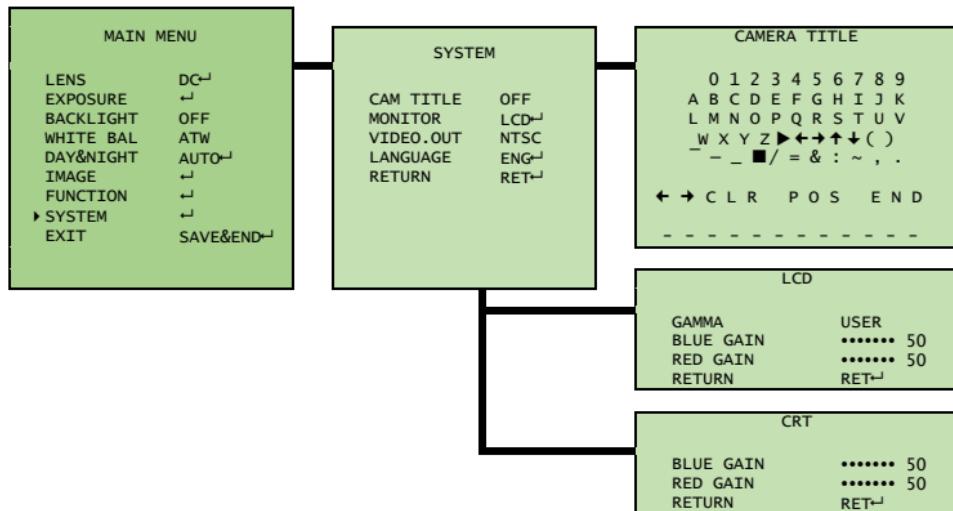
RED GAIN Adjust the Red gain level ► 0 - 100

GAMMA Select the gamma level ► USER, 0.45 - 1.0

4) VIDEO OUT Select the video out type ► NTSC, PAL

5) LANGUAGE OSD menu LANGUAGE (16ea) ▶ ENGLISH etc.

<SYSTEM> Mode



EXIT

The EXIT menu provides the ability to adjust the RESET, SAVE & END and NOT SAVE functions of the camera.

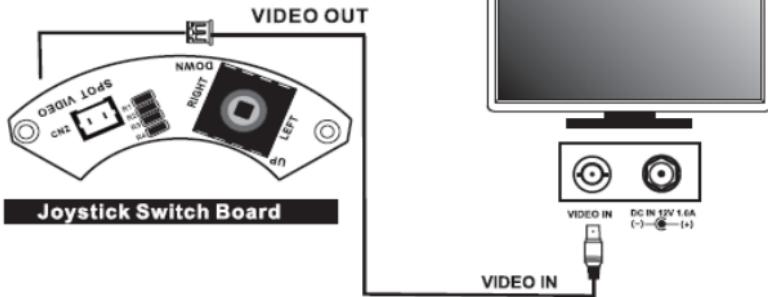
1) EXIT

RESET Factory initialization of camera settings

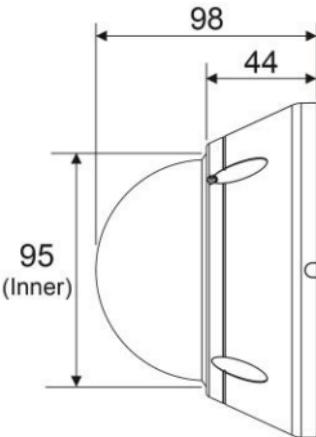
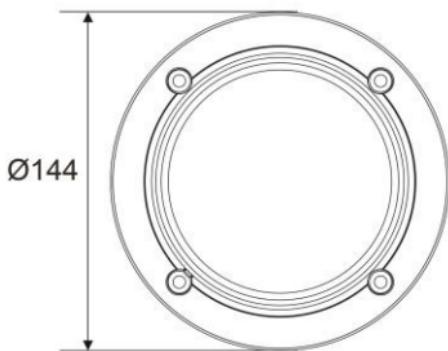
SAVE & END Save and exit menu

NOT SAVE Exiting the menu without saving

VIDEO OUT CHECK (CVBS)



EXTERNAL DIMENSION



Window Size	0.1 in. (1.8mm thick), Impact-resistant P.C (LEXAN)
Cable Entry	3.93 in. (10cm) diameter
Weight – Unit:	One 1" opening holes
Shipping:	1.14 lb. (0.530kg)
	1.44 lb. (0.650kg)

SPECIFICATIONS

MODEL		2M HD Dome CAMERA
General	Power Source	DC12V ± 10%
	Power Consumption	MAX 6.0 Watts (500mA)
	Image sensor	1/2.9" 2.1M Sony CMOS
	Total Pixels	2000(H) x 1121(V)
	Active Pixels	1920(H) x 1080(V)
	Scanning system	Progressive
	Sync. System	Internal
	Video Frame Rate	1920x1080p@25 fps ; 1920x1080p@30 fps
	CVBS Resolution	1000 TVL
	Min. illumination	1.0 lux(COLOR), 0 lux(BW, IR LED ON)
Function	Video Output	BNC (AHD / CVBS Selectable)
	IR	IR LED 24ea IR LED (850nm)
		DISTANCE 25M
	Camera Control	OSD Menu (Joystick Switch, coaxial control)
	S/N Ratio	More than 50dB (AGC off)
	Lens	MANUAL
	Exposure	Shutter AUTO, 1/60, FLK ~ 1/50,000 sec
		AGC 1 ~ 15
		Sens-UP OFF / AUTO (x2, x4, x6, x8, x10, x15, x20, x25, x30)
		Brightness 1 ~ 100
		D-WDR OFF / ON / AUTO
		Defog OFF / AUTO
	Backlight	OFF / BLC / HSBC
	White Balance	ATW / AWC / INDOOR / OUTDOOR / MANUAL / AWB
	Day & Night	AUTO / COLOR / B&W
Connector & etc.	DNR	2DNR OFF / LOW / MIDDLE / HIGH
		3DNR OFF / LOW / MIDDLE / HIGH
	S	Camera Title OFF / ON
		D-Effect OFF / FREEZE / MIRROR / NEG.IMAGE
	P	Motion Detection OFF / ON (4 zone)
		Privacy Masking OFF / ON (4 zone)
	E	Language ENG / CHN1 / CHN2 / GER / FRA / ITA / SPA / POL / RUS / POR / NED / TUR / KOR / JPN / HEB / ARB
		C
	I	Defect Detection LIVE DPC / WHITE DPC / BLACK DPC
		A Sharpness OFF / AUTO (0 ~ 10)
	L	Monitor CRT / LCD
		LSC (Shading) OFF / ON
	Video mode	NTSC / PAL
	Save & Exit	SAVE & EXIT / NOT SAVE / RESET
	Power input	DC Jack
	Video out	BNC Connector(AHD/CVBS)
	Transmission Distance	Over 500m via 5C-2V coaxial cable
	Lens Mount	Fixed mount
	Lens	f=2.8mm / 3.6mm F2.0 Fixed Lens, ICR (D&N)
	Operating temperature	14°F ~ 122°F (-10°C ~ +50°C)
	Operating humidity	0 ~ 96% (non-condensing)
	External dimension	Φ144 x 98 mm
	Weight	530g
	Ingress Protection	IP66

FULL HD DOME CAMERA

5030xxxxA