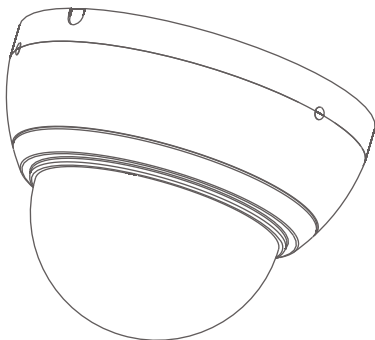


DNR Super High Resolution Day & Night Color Camera

3-AXIS INDOOR DOME CAMERA

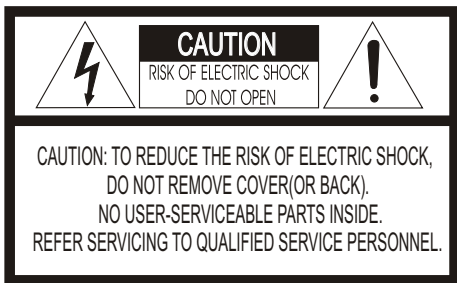


Please read this manual thoroughly before use, and keep it handy for future reference.

WARNINGS AND CAUTIONS:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION:



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.

PRECAUTIONS

Safety -----

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further.

Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

Height and vertical linearity controls located at the rear panel are for special adjustments by qualified personnel only.

Installation -----

Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust, mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

Cleaning -----

Clean the unit 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.

Retain the original carton and packing materials for safe transport of this unit in the future.

FCC COMPLIANCE STATEMENT

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.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

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 SAFEGUARDS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that product heat.
9. Do not defeat the safety purpose of the polarized or grounding-type Plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. 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.
15. Use Certified/Listed Class 2 power source only.

INTRODUCTION

The camera provides high-quality images using SONY 1/3" CCD and digital signal processing LSIs.

Features:

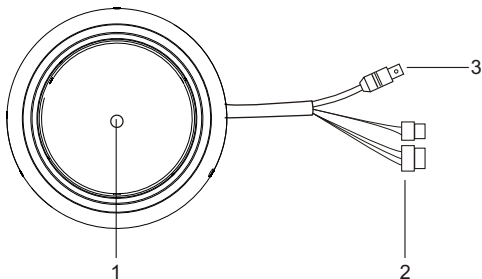
- 1/3" Super HADII CCD for an image of high sensitivity
- Digital Wide Dynamic Range(Xtended Dynamic Range)
- Excellent picture quality
- 560 lines of resolution
- 0.25 Lux(Color), 0.01 Lux(B/W)@ F1.2 Sensitivity
- Auto electronic shutter [1/60(1/50) ~ 1/100,000] and manual electronic shutter modes
- OSD (On Screen Display)
- Auto and manual white balance modes
- Selectable BLC Zone
- HSBLC
- 3D-Digital Noise Reduction
- Day&Night (Auto/Manual)
- Privacy Zone 8 point, Motion Detection 4 Point
- SHARPNESS, D-ZOOM, NEGA/POSI, MIRROR, V FLIP, ROTATION, FREEZE
- AGC (Auto Gain Control)
- VIDEO OUT(BNC)
- Internal/AC line lock
- 2.6~6mm, 4-9mm, 2.8~12mm, 6~50mm D&N Auto Iris Lens.
Operates in 12VDC or 24VAC
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.

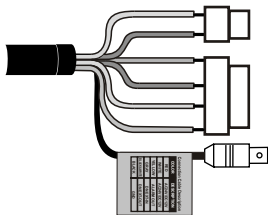
CAUTION: Before plugging in, please check the label to make sure you have the proper rating.

CAMERA CONNECTIONS



1. **Lens** : Allows a wide area to be monitored.

2. Color Lead Wire & Color Display Label



Connection Cable Description

COLOR	DESCRIPTION
RED	AC24V/DC12V
WHITE	AC24V/DC12V
YELLOW	ALARM OUT
GRAY	DN EXT-IN
BLACK&WHITE	DN EXT-OUT
BLACK	GND



REMINDER:

Never aim the camera directly into the sun.

3. Power : power source from a DC 12V / AC24V +/- 10%

Use Certified/Listed Class 2 power supply transformer only.

*If use DC 12V / AC24V power adaptor, use the power consumption 5W over.

4. Video : BNC connector used to connect the camera to a monitor, switcher, etc.

5. DAY&NIGHT I/O Terminals

- To select Day/Night mode using external equipment, connect control lines to the appropriate terminals.

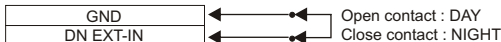
• DAY&NIGHT OUTPUT

It is the function that can turn on external IR LED Lamp by detecting the sensitivity on the AGC level when the D&N mode is set "AUTO" on the OSD menu of the camera.



• DAY&NIGHT EXTERNAL INPUT

It is the function that can be switched to DAY Mode or NIGHT Mode by receiving the D&N on/off signal from external light sensor or IR LED LAMP. When D&N Mode is set "External" on the OSD menu of the camera.



6. ALARM OUT

Motion detection signals are output through this port. (On High (5V))

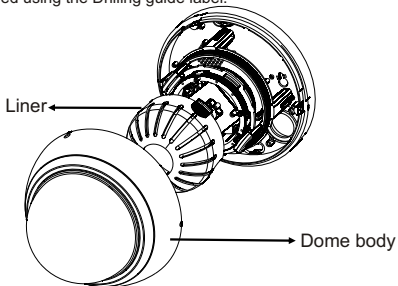
PACKAGE CONTENTS

The package contains the following.

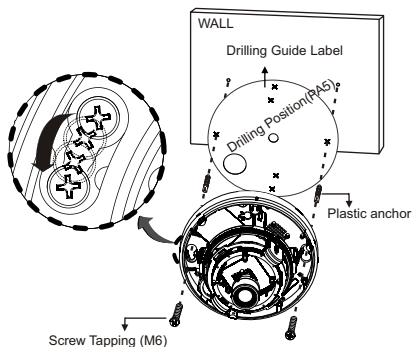
Camera in Housing.....	1
Instruction Manual (This Document).....	1
Accessory Kit for Installing.....	1
Drilling guide label.....	1

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.

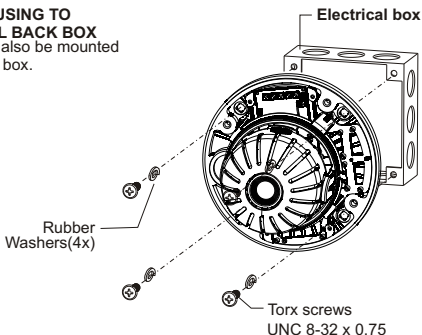


2. To remove dome cover, turn the dome body counterclockwise until locators reach end of travel and pull off. Push the liner on the sides where the patterns are put in the teeth of a comb and pull it out.



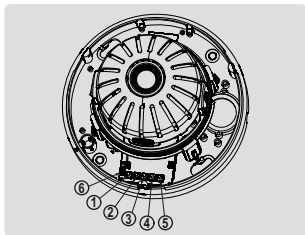
• **MOUNTING HOUSING TO AN ELECTRICAL BACK BOX**

The housing can also be mounted on a 4s electrical box.



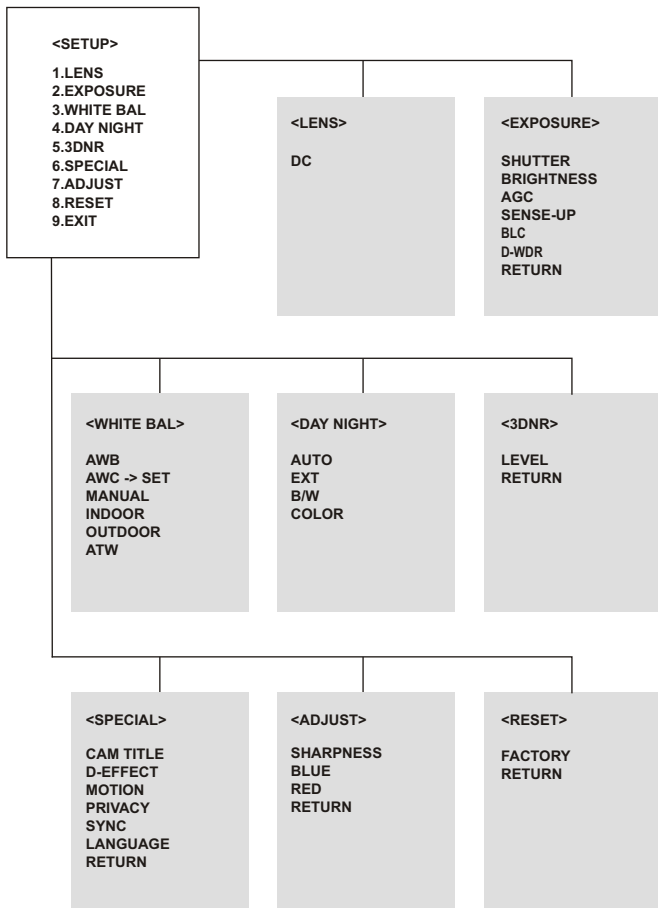
3. Attach the housing to the ceiling using suitable fasteners, M6x35 tapping screws are supplied only use if they are suitable. Turn the housing to right direction about 16 degrees to lock in place.
4. The assembly of the dome body and liner is in reverse order of disassembly. Finally, lock dome body with locking screw(M3X5) from the accessory kit.

OPERATING CAMERA



- ① Enter Button
- ② Up
- ③ Down
- ④ Left
- ⑤ Right
- ⑥ Spot Video Out

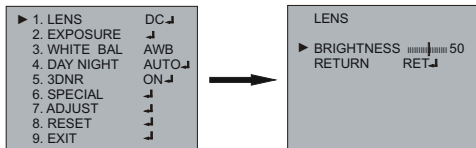
STRUCTURE OF THE SETUP MENU



LENS (Selection)

This function is used to adjust the brightness of the screen.

1. When the SETUP menu is displayed on the screen, please position the arrow to point to 'LENS' by using the UP and DOWN buttons.
2. Please select the type of the lens you wish to use by pressing the LEFT or RIGHT button.

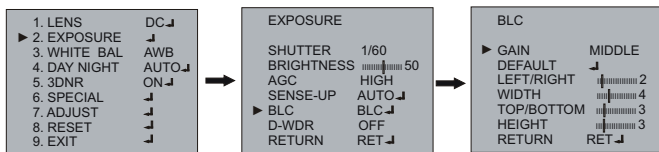


Note The brightness of the screen can be adjusted in DC mode.
The brightness can be adjusted within the range of 0 ~ 100.
The optimum level of brightness for the user can be achieved by adjustment.

EXPOSURE

The EXPOSURE menu is used to set the automatic light control method for this camera.

- 1) SHUTTER Select the shutter mode. (1/60(50), FLK~ 1/100,000 sec, x2 ~ x256)
Can be changed while in shutter mode.
- 2) BRIGHTNESS Adjust BRIGHTNESS level (0 ~ 100)
Can be adjusted while in manual lens mode.
- 3) AGC Auto gain control (OFF / LOW / MIDDLE / HIGH)
- 4) SENSE-UP Use under very low light condition for full color surveillance.
Select maximum Low-Shutter value. (x2 ~ x256)
- 5) BLC Sharpens subjects with backlight. (OFF / BLC / HBLC)
- 6) D-WDR Digital Wide dynamic range (Xtended Dynamic Range)
OFF / INDOOR / OUTDOOR



<BLC MODE>

WHITE BAL

The screen color can be adjusted by using the WHITE BALANCE function.

1) **AWB**

Wide range auto white balance mode.

2) **AWC -> SET**

Please press the ENTER button while the camera is directed at a piece of white paper to obtain the optimum state under current illumination. If the environment including the light source is changed, you have to adjust the white balance again.

3) **MANUAL**

Manual mode. User can change R and B Gain manually.

4) **INDOOR**

Set the color temperature to 3200°K

5) **OUTDOOR**

Set the color temperature to 6300°K

6) **ATW**

Set the color temperature 2500°K to 9500°K

1. LENS	DC
2. EXPOSURE	↓
▶ 3. WHITE BAL	MANUAL ↓
4. DAY NIGHT	AUTO ↓
5. 3DNR	ON ↓
6. SPECIAL	↓
7. ADJUST	↓
8. RESET	↓
9. EXIT	↓

WHITE BAL MANUAL	
▶ BLUE	50
RED	50
RETURN	RET ↓

<WHITE BAL MANUAL MODE>

DAY NIGHT

The DAY/NIGHT menu is used to configure the day and night related setting for this camera. This camera can turn the IR(infrared)filter on or off.

Mode : AUTO / EXT / B/W / COLOR

1. LENS	DC
2. EXPOSURE	↓
3. WHITE BAL	AWB
▶ 4. DAY NIGHT	AUTO ↓
5. 3DNR	ON ↓
6. SPECIAL	↓
7. ADJUST	↓
8. RESET	↓
9. EXIT	↓

DAY NIGHT AUTO	
▶ DELAY	5
S-LEVEL	50
E-LEVEL	30
RETURN	RET ↓

<DAY/NIGHT AUTO MODE>

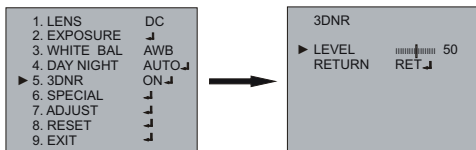
1. LENS	DC
2. EXPOSURE	↓
3. WHITE BAL	AWB
▶ 4. DAY NIGHT	B/W ↓
5. 3DNR	ON ↓
6. SPECIAL	↓
7. ADJUST	↓
8. RESET	↓
9. EXIT	↓

DAY NIGHT B/W	
▶ BURST	OFF
RETURN	RET ↓

<DAY/NIGHT B/W MODE>

3DNR (Digital Noise Reduction)

You can configure the DNR(Digital Noise Reduction) related settings. If you press the Setup switch when ON is selected in 3DNR, the corresponding screen appears.



SPECIAL

1) CAM TITLE

A — CAM TITLE
0123456789
ABCDEFGHIJK
LMNOPQRSTU
V
B — WXYZ ▶←→↑↓()
~_ | / = & : ~ , " "

C — ↔ CLR POS END

A. CAM TITLE

B. Character Table

C. Command Line

← : Move to left

→ : Move to right

CLR : Erase all characters

POS : Move the position of title

END : Save and End

2) D-EFFECT

FREEZE

Select the real or still mode.

MIRROR

Reverse the screen in 3 modes selection.

(OFF / MIRROR / V FLIP / ROTATION)

D-ZOOM

D-Zoom (x2~x32) / Adjust PAN / TITL

GAMMA

Adjust the luminance (0.05~1.00)

NEGA / POSI

Select the negative or positive mode.

3) MOTION

AREA SELECT

Select MD area number.

AREA DISPLAY

Select MD ON/OFF

LEFT/RIGHT

Adjust the location of the MD area with boundary LEFT and RIGHT.

WIDTH

Adjust width of MD area

TOP/BOTTOM

Adjust the location of the MD area with boundary TOP and BOTTOM

HEIGHT

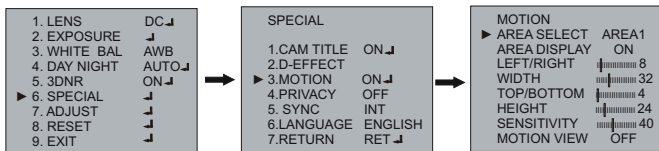
Adjust height of MD area

SENSITIVITY

Adjust sensitivity of MD area.(0~40)

MOTION VIEW

The screen displays with green dots. When a motion is detected in the selected area, the green dots are displayed on the screen.



4) PRIVACY

AREA SELECT
AREA DISPLAY
LEFT/RIGHT

Select MASK area number.

Select MASK ON/OFF

Adjust the location of the MASK area with boundary LEFT and RIGHT

WIDTH
TOP/BOTTOM

Adjust width of MASK area

Adjust the location of the MASK area with boundary TOP and BOTTOM.

HEIGHT
COLOR

Adjust height of MASK area

Select MASK color. (0~15)

1. LENS	DC	↓
2. EXPOSURE		↓
3. WHITE BAL	AWB	
4. DAY NIGHT	AUTO	↓
5. 3DNR	ON	↓
▶ 6. SPECIAL		↓
7. ADJUST		↓
8. RESET		↓
9. EXIT		↓



SPECIAL		
1. CAM TITLE	ON	↓
2. D-EFFECT		
3. MOTION	OFF	
▶ 4. PRIVACY	ON	↓
5. SYNC	INT	
6. LANGUAGE	ENGLISH	
7. RETURN	RET	↓



PRIVACY		
▶ AREA SELECT	AREA1	
AREA DISPLAY	ON	
LEFT/RIGHT		8
WIDTH		20
TOP/BOTTOM		10
HEIGHT		35
COLOR		0
RETURN	RET	↓

<PRIVACY MODE>

5) SYNC

INT
L/L

Select Internal or Line Lock mode.

This mode is necessary for using the internal synchronization.

This mode is necessary for the operation of multi camera because it synchronizes the camera phase by using the external signal (AC Signal).

PHASE

Sync phase is adjustable in line lock mode.

6) LANGUAGE

You can change the OSD language using the LEFT/RIGHT Setup switch.

ADJUST

- 1) SHARPNESS
- 2) BLUE
- 3) RED

Can be adjusted SHARPNESS of outlines.(0~31)

Adjust B-GAIN value.(0~100)

Adjust R-GAIN value.(0~100)

RESET

- 1) FACTORY

Returns to the level which was set by the manufacturer for shipment.

EXIT

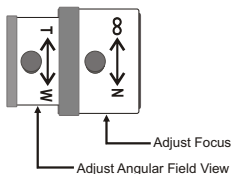
- 1) EXIT

Saves all the setting menus and then exits.

LENS ADJUSTMENT (OPTIONAL VARIFOCAL LENS)

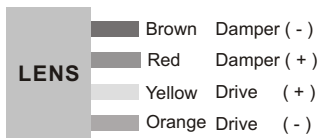
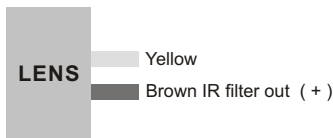
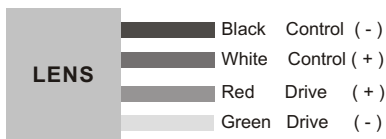
Field of view: Adjust setting from Telephoto (T) to wide (W) field of View.

Focus: Adjust lens focus from near (N) to infinity (∞).



DC AUTO IRIS LENS

	2.6~6mm	4-9mm	2.8~12mm (Aspherical)	6-50mm
Image Size	1/3" CCD	1/3" CCD	1/3" CCD	1/3" CCD
Focal Length	2.6-6.0mm \pm 5%	4.0-9.0mm \pm 5%	2.8-12mm \pm 5%	6.0-50mm \pm 5%
Aperture Ratio	1 : 1.6 \pm 5%	1 : 1.6 \pm 5%	1 : 1.4 \pm 5%	1 : 1.6 \pm 6.9%
Angular Field of View	DIAGONAL 2.6mm : 134.6° 6mm : 59.2°	DIAGONAL 4mm : 92.4° 9mm : 39.2°	2.8mm : 119.9° 12mm : 28.8°	DIAGONAL 6mm : 58.6° 50mm : 7.1°

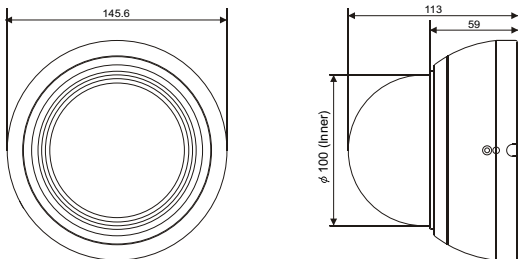


SPECIFICATIONS

MODEL		NTSC	PAL	
Power	Power source	DC 12V / AC 24V \pm 10%		
	Power consumption	3.0 Watts		
General	Image sensor	1/3" SONY Super HADII CCD		
	Total pixels	811(H) x 508(V)	795(H) x 596(V)	
	Scanning system	2:1 interlace		
	Scanning frequency	15.734KHz(H) x 59.94Hz(V)	15.625KHz(H) x 50Hz(V)	
	Sync. system	Internal / Line lock		
	Resolution	560 TV lines		
	Min. illumination	Color(0.25 Lux), B/W(0.01 Lux) (SENS UP : OFF)		
	Video output	1.0 Vp-p (75 ohm, composite)		
	S/N ratio	50dB (AGC OFF)		
	F U N C T I O N	DNR (Digital Noise Reduction)	On / Off (Adjustable Gain)	
		D-WDR (Digital Wide Dynamic Range)	On(Indoor / Outdoor) / Off	
		BLC (Back Light Composite)	BLC / HSBLCL / OFF Adjustable Size & Gain	
		Day & Night (True D/N)	Color / B/W / Auto (Filter auto change) / EXT	
		MD (Motion Detection)	On / Off (4 Programmable zone)	
		SENSE-UP (Low Shutter Speed)	Auto / Off (Selectable limit 2X ~ 256X)	
		PM (Privacy Masking)	On / Off (8 Programmable zone)	
		WB (White Balance)	AWB / ATW / AWC / Manual / Indoor / Outdoor	
		AGC (Auto Gain Control)	On(Low / Middle / High) / Off	
		Electronic Shutter Speed	Auto / Flickerless / Manual (256X, 1/60 ~ 1/ 100,000)	
		Sharpness	On / Off (Level adjustable)	
		Flip	Horizontal / Vertical / Rotate	
Effect		D-Zoom x32(Pan / Tilt) / Nega / Freeze		
Setup Method		OSD setup menu		
OSD Language	English / Korean / Japanese			
Connector & etc.	Power input	Terminal block		
	Video output	BNC connector		
	External I/O Terminals	Alarm output, Day & Night input / output		
	Lens mount	Fixed mount		
	Lens	2.6~6mm, 4-9mm, 2.8~12mm, 6~50mm D/N Vari-focal (DC AI)		
	Operating temperature	-10°C ~ +50°C		
	Operating humidity	0 ~ 96% (non-condensing)		
	External Dimension	146 x 113 mm (Bubble Diameter Ø100)		
Weight	450g			

EXTERNAL DIMENSION

Dimensions



Unit: mm

Window Size	0.1 in. (2.5mm thick), impact-resistant P.C (LEXAN) 3.93 in. (10cm) diameter
Cable Entry	One 1" opening holes
Weight - Unit: Shipping:	0.99 lb. (0.45kg) 1.41 lb. (0.64 kg)

**Super High Resolution
Day & Night Color Camera**