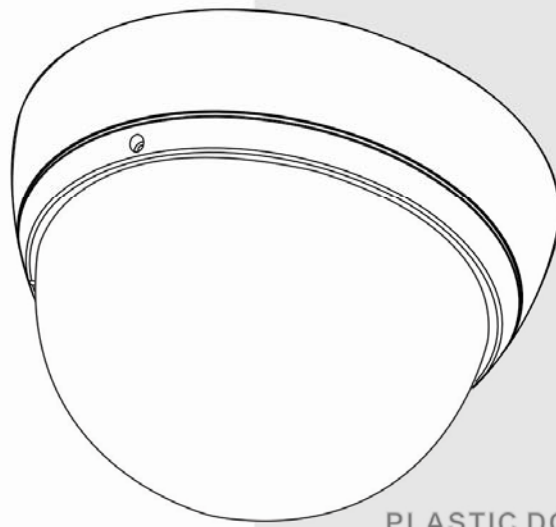


**700 TV Lines  
Super High  
Resolution  
Color Camera**



3-AXIS  
PLASTIC DOME CAMERA

*Please read this manual thoroughly before use, and keep it handy for future reference.  
Design and specifications are subject to change without notice.*

# FCC COMPLIANCE STATEMENT

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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

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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. 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/UL60950-1 or Certified/Listed Class 2 power sources only.
11. Indoor use only



## 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.



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.

# INTRODUCTION

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The camera provides high-quality images using CCD technology especially designed for closed-circuit television (CCTV) and security surveillance applications.

## Features:

- 1/3" 960H Super HAD CCD II
- 700TVL Super High Resolution
- Day & Night function
- WDR (Wide Dynamic Range)
- High sensitivity 0.1Lux(Color), 0.00005Lux(BW, Sens-up)
- 3D Noise Reduction
- Sens-up(~x512)
- BLC, HSBLC
- Motion Detection
- Privacy Masking
- Defog
- Multi Language Support (15 languages)
- 2.8-12mm Auto Iris Vari-focal Lens
- OSD Control (Joystick)
- 3-Axis (Pan/Tilt/Rotate) Bracket

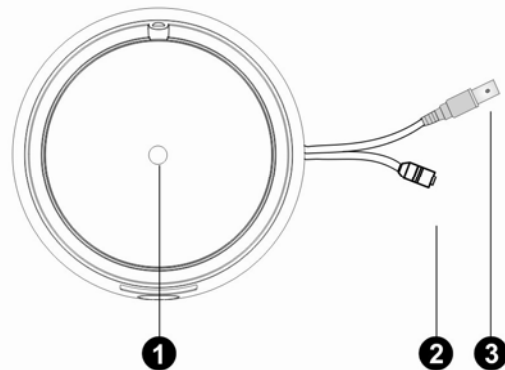
## CAMERA CONNECTIONS

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**1. Lens :** 2.8 ~ 12mm Vari-focal lens for wide area monitoring. (D&N with ICR)

**2. Power :** 24V AC input / 12V DC input  
power source from a DC 12V or AC 24V  $\pm$  10%  
60/50Hz  $\pm$  1Hz  
Use Certified/Listed Class 2 power source only.

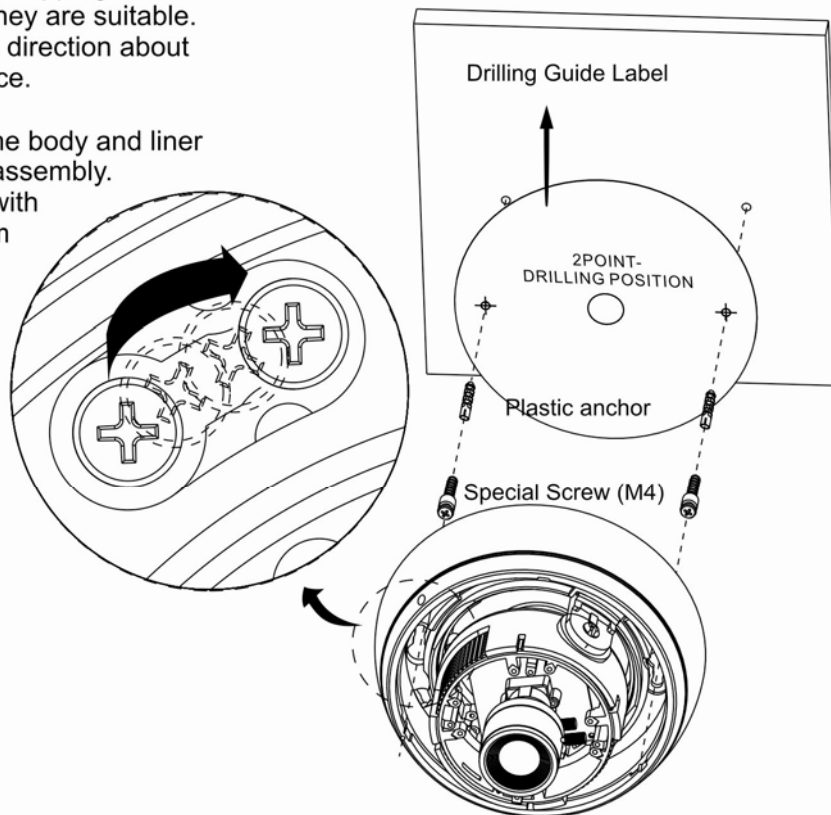
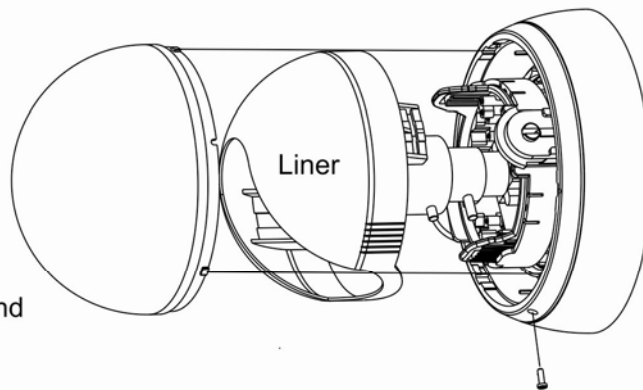
\*If using DC 12V power adaptor, use a power supply capable of supplying 5 Watts.



**3. Video :** BNC connector used to connect to a monitor, switcher, etc.

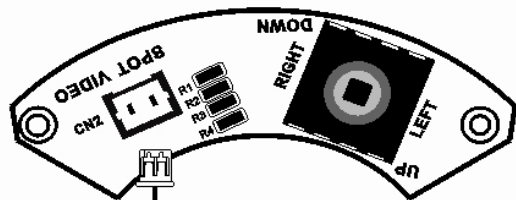
# BASE INSTALLATION

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. 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 put in the teeth of a comb and pull it out.
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 night 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.



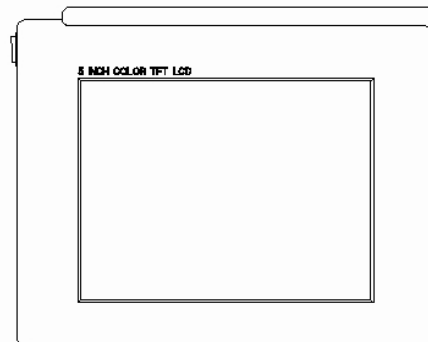
# VIDEO OUT CHECK

## Joystick Switch Board



VIDEO OUT

## Test Monitor

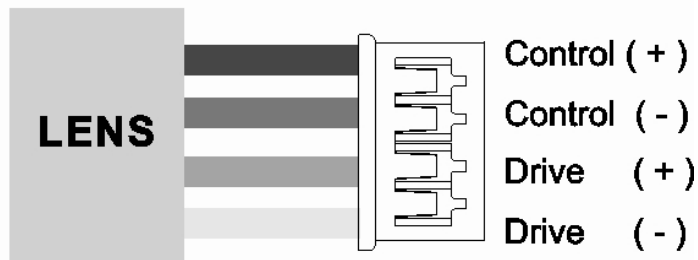


VIDEO IN DC IN 12V 1.0A (-) (+)

VIDEO IN

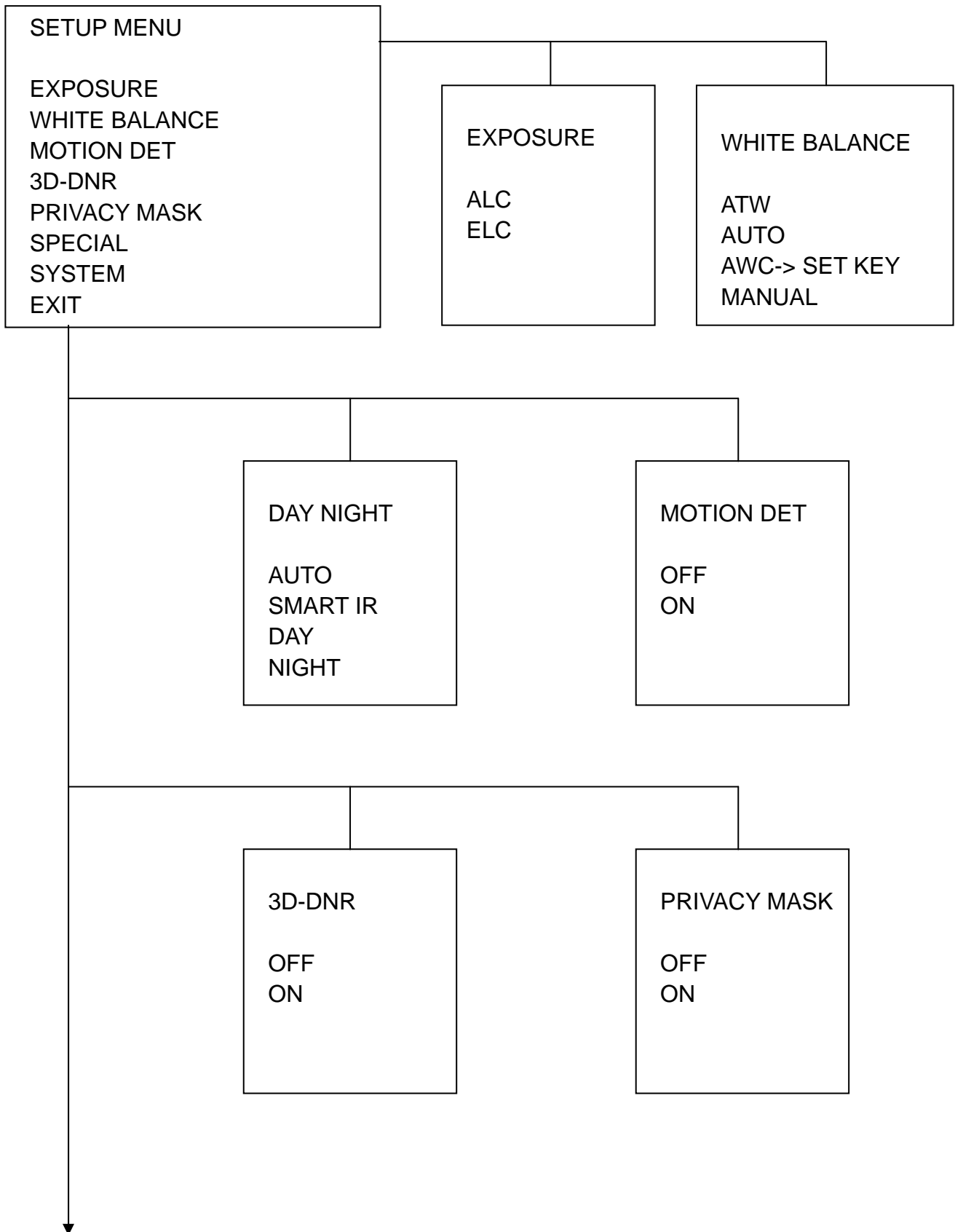
# DC AUTO IRIS LENS

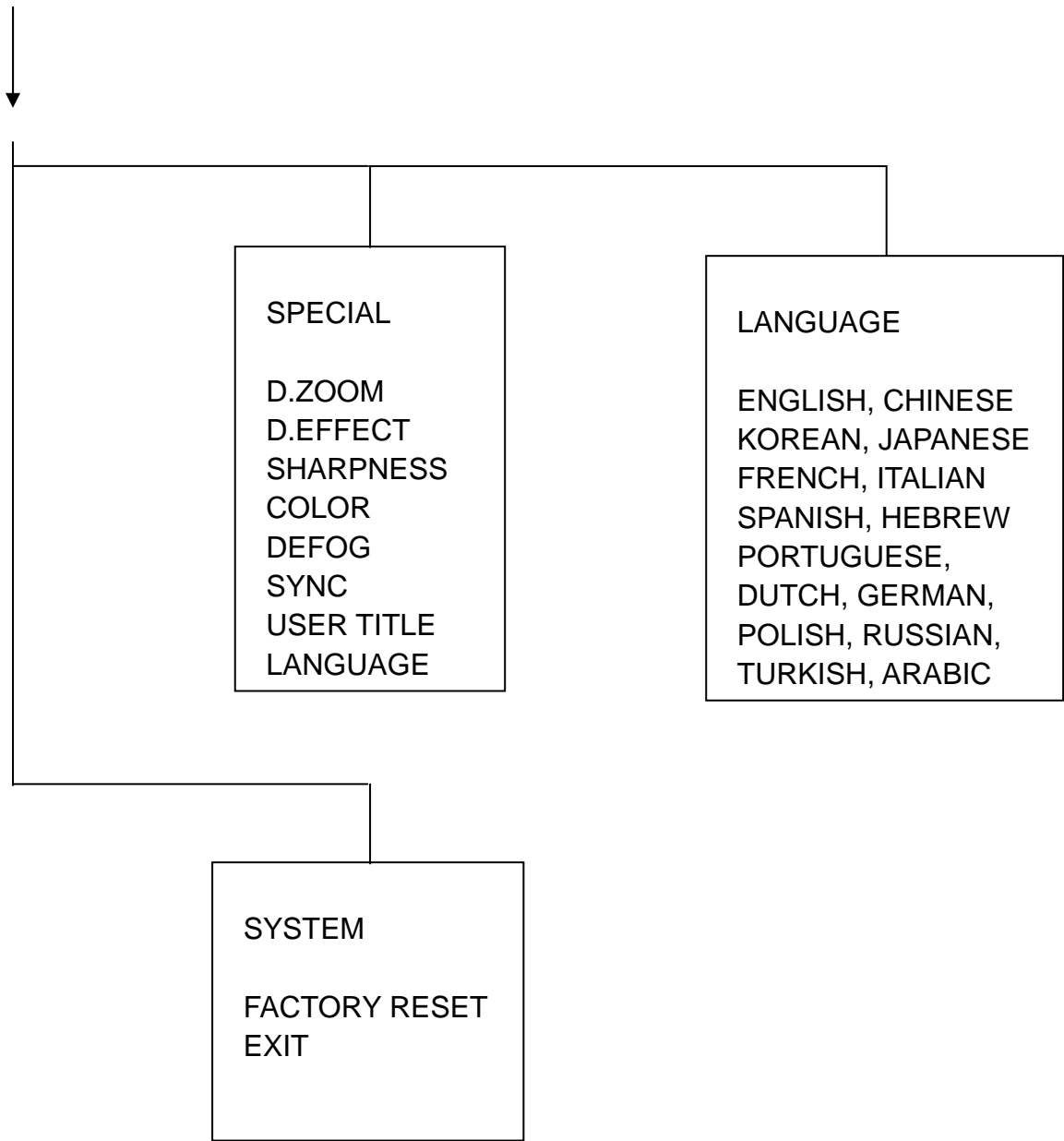
	2.8-12mm
Image Size	1/3" CCD
Focal Length	2.8-12mm $\pm$ 5%
Aperture Ratio	1 : 1.2 $\pm$ 5%
Angular Field of View	DIAGONAL 2.8mm : 119.9° 12mm : 28.80°



# OSD MENU STRUCTURE

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# EXPOSURE

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## ALC/ELC

**BACKLIGHT** - Adjusts to view the object clearly in backlight conditions.

**BLC** : The backlight compensation feature helps alleviate issues of visibility in high contrast areas. Set the BLC limit.

**HSBLC** : Use for masking brightness of the specific area to view the subject more clearly. The HSBLC mode is automatically activated only in low luminance scene

- AREA setting selects an area.
- GRAY SCALE selects a gray scale
- USER SCALE selects a bright level (5 levels)
- MASK: if setting MASK ON, the mask function is activate only when HSBLC is automatically activated in low luminance scene.

**WDR** : sets Wide Dynamic Range.

**BRIGHTNESS** - Adjust the brightness.

If setting the brightness to lower value, the images is darkened. If setting the brightness to higher value, the image gets bright.

Lower value(dark image) --- Higher value(bright image)

**AGC - Set AGC: OFF / LOW / MIDDLE / HIGH**

If the images are too dark, change the maximum AGC value to make the images brighter.

**SHUTTER** - Select Shutter Speed : AUTO / OFF / A.FLK / 1/160 ~ 1/120,000

**SENS-UP** - OFF / AUTO(x4) / MANUAL (x2 ~ x10 ~ x512)

# WHITE BALANCE

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**ATW** (Auto Tracing White Balance)

Level : -10 ~ 0 ~ 10

**AUTO**

Level : -10 ~ 0 ~ 10

**AWC -> SET KEY** : It is able to set up the white balance automatically to where the object is seen as desired.

**MANUAL**: Set the white balance options manually.

**Red**: Obtains optimum amount of Red gain.

**Blue**: Obtains optimum amount of Blue gain.

## DAY / NIGHT

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**AUTO** : Set to change the Day / Night mode automatically.

NOTE: If you set the AGC to OFF, the AUTO mode of this function is not available and [--] mark is displayed

Burst - OFF / ON

Allows the color burst signal in monochrome mode to be removed.

Level - LOW / MIDDLE / HIGH

Dwell Time - 3 ~ 5 ~ 60 sec.

Sets the hysteresis time before switching between color/mono & mono/color to reduce the "hunting effect"

**SMART IR**: Set [ON] to avoid anti-saturation of IR LEDs

Burst - OFF / ON

Level - -10 ~ 0 ~ 10

Position & size - Adjusts the position & the size of SMART IR.

**DAY** : Color only

**NIGHT** : Monochrome only

Burst - allows the color burst signal in monochrome to be removed.  
OFF / ON

NOTE ; Select the BURST-ON or OFF when the color noise occurs on the screen in NIGHT mode.

## MOTION DETECTION

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It detects the moving objects in the scene by monitoring changes in brightness level. You can select the level of sensitivity for motion detection to 8 zones.

### AREA SETUP

Sets AREA SELECTION ( 1 ~ 8 AREAS)

Sets STAGE - ON / OFF

Sets POSITION - Moves horizontal position of the mask

Moves Vertical position of the mask

Enlarges or decreases the horizontal size of the mark

Enlarges or decreases the vertical size of the mark.

**SENSITIVITY** : 0 ~ 50 ~ 100

0 - low sensitivity

100 - high sensitivity

**DISPLAY** - OFF / OUTLINE / MASK 1 / MASK 2

**ALARM OUT** - OFF / MESSAGE

## 3D-DNR

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It is used to remove Digital Noise from the image in low light conditions, when AGC is applied.

**LEVEL** : 0 ~ 50 ~ 100

## PRIVACY MASK

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It is used to block out from view part of the field of view from being seen/recorded. Select part the screen to be not displayed.

Up to 14 zones can be registered.

**RECTANGLE - MASK SELECTION** : 1 ~ 8

**DISPLAY** : OFF / ON

**POSITION** : Moves horizontal position of the mask

Moves Vertical position of the mask

Enlarges or decreases the horizontal size of the mask

**CIRCLE - MASK SELECTION** : 1 ~ 4

**DISPLAY** : OFF / ON

**POSITION** : Moves horizontal position of the mask. (10~ 90)

Moves Vertical position of the mask. (10 ~ 90)

**SIZE** : Enlarges or decreases the horizontal size of the mask. (4 ~ 20)

Enlarges or decreases the vertical size of the mask. (4 ~ 20)

**RADIUS** : Enables to adjust the RADIUS size. (1 ~ 100)

**POLYGON - MASK SELECTION**: 1 ~ 2

**DISPLAY** : OFF / ON

**SHAPE** : draws the polygon on this menu.

**POSITION** : Moves horizontal position of the mask. (10~ 90)

Moves Vertical position of the mask. (10 ~ 90)

**SIZE**: Enlarges or decreases the horizontal size of the mask. (4 ~ 20)

Enlarges or decreases the vertical size of the mask. (4 ~ 20)

**NOTE**: you can adjust eh mask color manually except for color 8.

RED, GREEN, BLUE and TRANSPARENCY adjustments are applied in common from COLOR 1 to COLOR 7, after mask setting

# SPECIAL

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**D-ZOOM** - ZOOM enlarges the screen ( x1.0 ~ x16.0)

PAN moves the screen to left of right ( -100 ~ 0 ~ 100)

TILT moves the screen to up or down (-100 ~ 0 ~ 100)

**D-EFFECT**- V-FLIP : Flips the picture vertically

MIRROR : Turns on the mirror effect

ROTATE : Rotates the picture (180 degrees)

**SHARPNESS** - sets the screen sharpness (0 ~ 50 ~ 100)

**COLOR** - switches the displayed picture to gray scale or color.

ON: displays the picture with color (0 ~ 50 ~ 100)

OFF: displays the picture with gray scale (0 ~ 50 ~ 100)

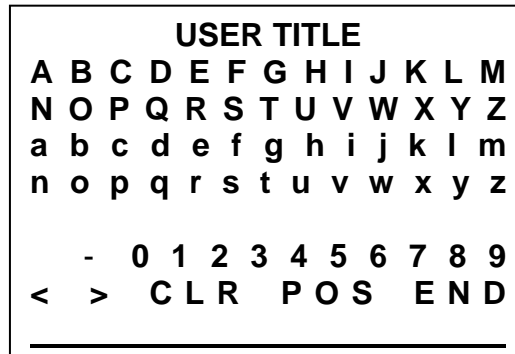
**DEFOG** - Images in extraordinary environment such as for or rain or in a very strong luminous intensity have DR(Dynamic Range), lower than ordinary images. It has a contrast based defog function, which is used to overcome such shortcoming.

ON - LEVEL (0 ~ 10)

**SYNC** - INT

This model supports only INT(internal) in SYNC.

**USUER TITLE** - You can use the camera identification to assign a number and character to the camera. It is displayed on the upper left of the screen. To remove the user title, Select OFF.



CLR: Clear all entered characters and numbers.

POS: Move the USER TITLE position on the screen using the arrow buttons.

END: Confirm your selection or exit the setting  
: Moves cursor to left or right.

(BLANK): inserts a space at the cursor position.

**LANGUAGE** - Select the viewer language for the camera setup menu and OSD information display

ENGLISH	CHINESE	KOREAN
JAPANESE	FRENCH	ITALIAN
SPANISH	PORTUGUESE	DUTCH
GERMANY	POLISH	RUSSIAN
TURKISH	ARABIC	HEBREW

## SYSTEM

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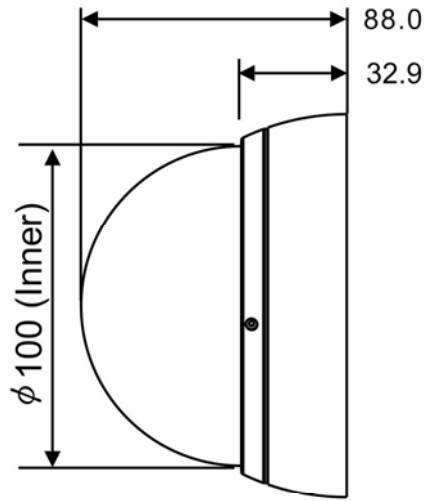
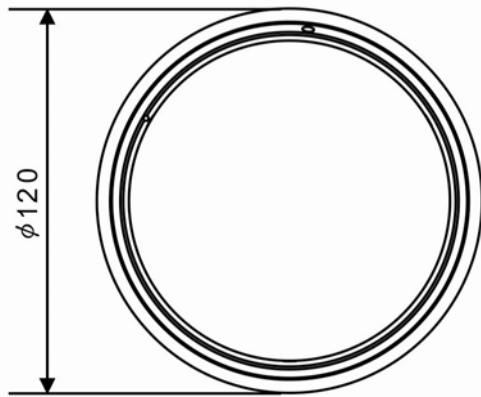
**FACTORY RESET** - Returns to the camera to the factory default settings.

**DEFECT PIXEL** - It can compensate the defected pixel (which may occur while using.)  
Press the key to close the lens cap.

# SPECIFICATION

MODEL		NTSC	PAL
POWER	Power Source	DC 12V±10% / AC24V±10%	
	Power Consumption	3.5W(300mA)	
VIDEO	Image Sensor	1/3" 960H Super HAD II	
	Total Pixels	1020(H)x508(V)	1020(H)x596(V)
	Effective pixels	976(H)x494(V)	976(H)x582(V)
	Scanning System	2:1 interlace	
	Scanning Frequency	15.734KHz(H) x 59.94Hz(V)	15.625KHz(H) x 50Hz(V)
	Sync. System	Internal	
	Electronic Shutter	1/60~ 1/120,000sec	
	Resolution	700TVL	
	Min. illumination	Color : 0.1 Lux, B/W : 0.05 Lux B/W : 0.00005(Sens-up x512)@ F1.2 50IRE	
	Video Output	1.0 Vp-p (75 ohm, composite)	
	S/N Ratio	50dB(AGC off)	
	FUNCTION	Camera Control	OSD(Joystick Switch)
Image Enhancement		WDR (Wide Dynamic Range)	
BLC(Backlight Compensation)		OFF, BLC, HSBL, WDR	
Day & Night		Day&Night (ICR Filter)	
MD (Motion Detection)		Motion Detection ( 8 areas ) Adjustable Size & Sensitivity	
PM (Privacy Masking)		Retangle:8 Areas, Circle: 4 Areas, Polygon: 2 Areas	
WB (White Balance)		ATW(1700K11.000K) / AUTO /One PUSH / MANUAL	
AGC (Auto Gain Control)		OFF / LOW / MIDDLE / HIGH	
Exposure		ELC /ALC	
Brightness		0 ~ 100 steps	
Sharpness		0 ~ 100 steps	
Sens-up		OFF, AUTO(x4), MANUAL(x2 ~ x512)	
DNR(Dynamic Noise Reduction)		3D DNR (100 Steps)	
Digital Image Effect		Digital Zoom( ~x16), Defog, Mirror, V-flip, Rotate	
Camera ID		0 ~ 255	
Title		A ~ Z / 0 ~ 9	
OSD Language		English, Chinese, Korean, Japanese, French, Italian, Spanish, Portuguese, Dutch, German, Polish, Russian, Turkish, Arabic, Hebrew	
CONNECTOR & ETC		Power Input	2-Pin Wire / Terminal Block / DC Jack
	Video Output	BNC connector / Spot Out	
	LENS	2.8~12mm F1.2~360 Vari Focal Lens	
	Operating Temperature	-10℃ ~ +50℃ (14°F ~ 122°F)	
	Operating Humidity	0 ~ 96% (non-condensing)	
	External Dimension	120(∅) x 88(H) mm	
	Weight	285g	

# EXTERNAL DIMENSION



**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:** 0.63 lb. (0.3kg)

**Shipping:** 0.9 lb (0.4kg)

Unit: mm

50303762A