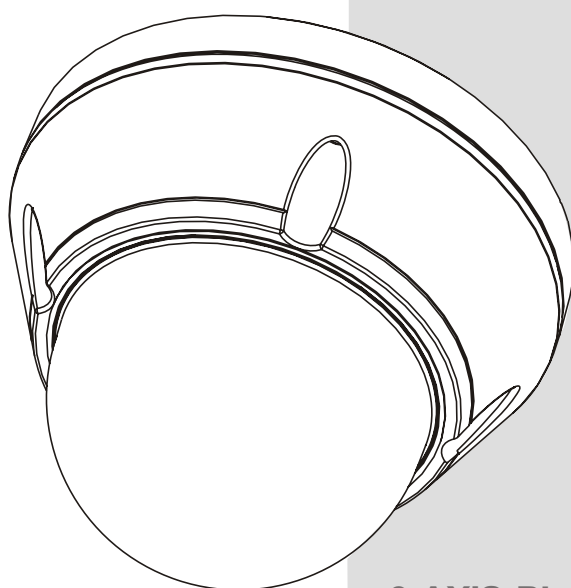# 600TV Lines Super High Resolution Color Camera
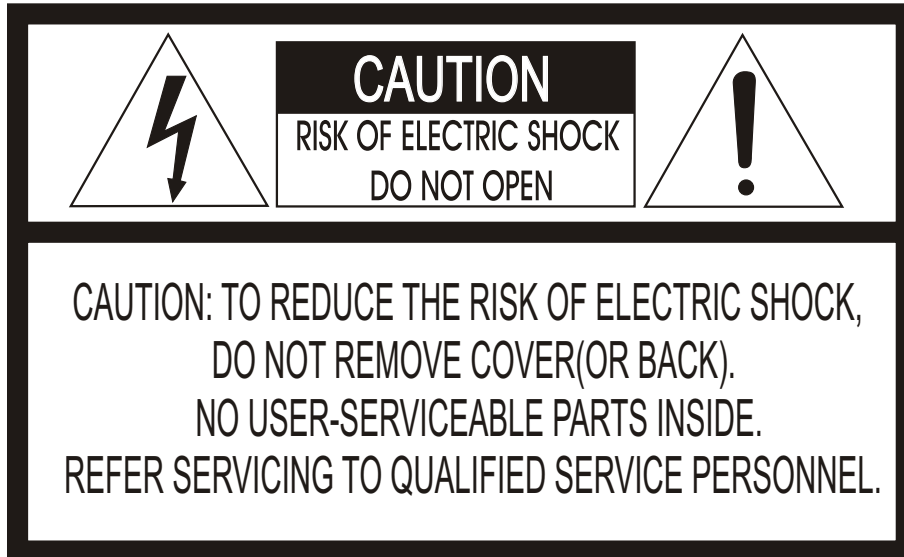
· **3-AXIS PLASTIC DOME CAMERA**

· **3-AXIS INFRARED - LED 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.

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:

```
┌─────────────────────────────────────────────────────┐
│  ⚡        ┌──────────────────────┐        !         │
│           │      CAUTION         │                   │
│           │ RISK OF ELECTRIC SHOCK│                  │
│           │     DO NOT OPEN      │                   │
│           └──────────────────────┘                   │
├─────────────────────────────────────────────────────┤
│   CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,     │
│        DO NOT REMOVE COVER(OR BACK).                 │
│        NO USER-SERVICEABLE PARTS INSIDE.             │
│   REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.    │
└─────────────────────────────────────────────────────┘
```

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

Installation ------------------------------------

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

Cleaning --------------------------------------

Clean the unit with a slightly damp soft cloth.
Use a mild household detergent. Never use strong solvents such as thinner or benzine 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 produce 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. 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.

13. Unplug this apparatus during lightning storms or when unused for long periods of time.

14. 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 moisture, does not operate normally, or has been dropped.

15. *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 QRE QUALIFIED TO DO SO.*

16. *Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.*

INTRODUCTION

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

Features:

- High resolution and high performance Sony® Super HAD™ Ⅱ Technology
- Excellent picture quality
- 600 lines(Color) of resolution
- 0.1 lux(Color), 0.04lux(B/W) @ F1.2 50IRE Sensitivity
- 0.1 lux(Color), 0 lux(B/W, IR LED ON) @ F1.2 50IRE Sensitivity (IR CAMERA ONLY)
- 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
- DWDR
- OSD Font Color (16 Color)
- BLC (Back Light Compensation)
- Smart IR (IR CAMERA ONLY)
- 30EA, 850mm IR LED (IR CAMERA ONLY)
- Day&Night (Auto / DAY / NIGHT / EXT)
- Private Mask (8 position, 16 Colors)
- AGC (Auto Gain Control)
- MIRROR (ON/OFF)
- VIDEO OUT BNC
- Motion Detection(4 point)
- HLC (High Light Compensation)
- DPC (Dead Pixel Cancellation)
- 2.8~12mm A/I Varifocal Lens F1.2 (D&N Lens option)
- Operates in AC24V +/- 10% / DC12V +/- 10%
- Use Certified / Listed Class 2 power source only
- Test monitor Output
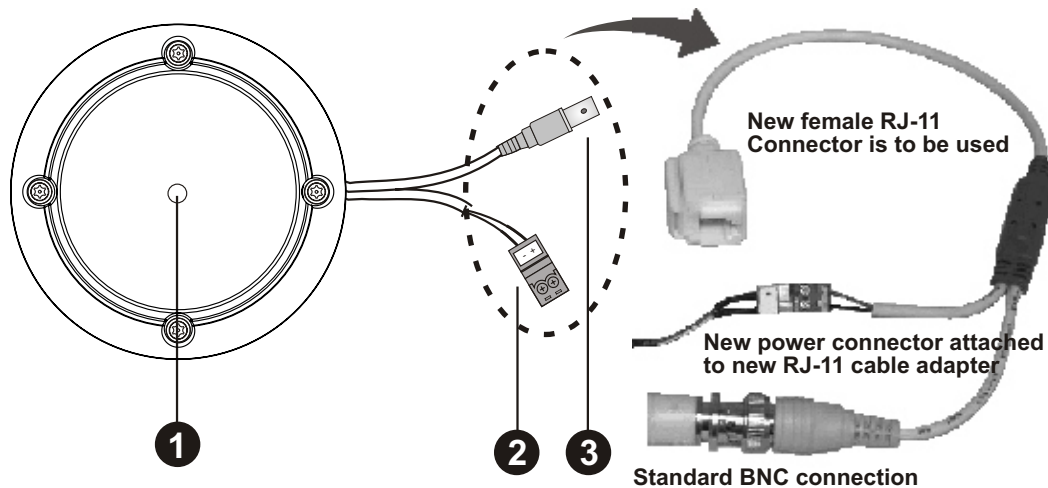- Camera Mount : camera mount directly to the wall or ceiling

⚠️ **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

New female RJ-11
Connector is to be used

New power connector attached
to new RJ-11 cable adapter

1 **2** **3**

Standard BNC connection

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

2. Power : 24V AC input / 12V DC input
    power source from a DC 12V or AC 24V ac +/-10% 60/50Hz +/-1Hz
    Use Certified/Listed Class 2 power source only.

   *If using DC 12V power adaptor,
    use a power supply capable of supplying 5 Watts. (IR model 7Watts)

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

CONTENTS of PACKAGE

The package contains the following.

1. Camera in Housing 1
2. Instruction Manual (This Document) 1
3. Accessory Kit for Installing 1
4. Drilling guide label 1
5. RJ11 to BNC/Power cable adaptor 1
6. 60ft RJ11 cable 1
7. Test monitor cable 1
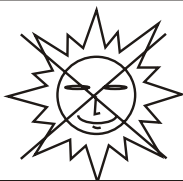
REMINDER:
Never aim the camera directly into the sun.

INSTALLATION

1. Loosen the four torx screws located midway up the front of the housing leave the screws intact in the front portion. **(Fig. 1)**

2. Drill the mounting location using the supplied drill guide label. **(Fig. 3)**

3. Attach the housing to the ceiling using suitable fasteners, M6x35 tapping screws are supplied only use if they are suitable. **(Fig. 3)**

4. Closing the housing using the loosen torx screws. **(Fig. 2)**

Torx screws M5x10 (4x)
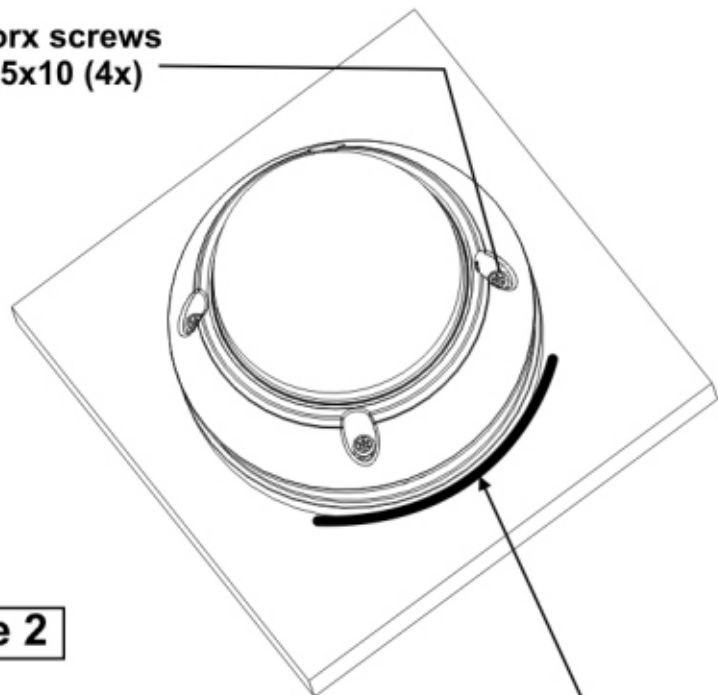
Figure 1

Figure 2

Seal around the housing base tightly using silicon rubber (no supplied)

CEILING / WALL

Drilling
Guide Label

Mounting Screw
M6X35(4x)

Plastic Anchor(4x)

Rubber Washers(4x)

Figure 3

IR camera

CEILING / WALL

Drilling
Guide Label

Mounting Screw
M6X35(4x)

Plastic Anchor(4x)

Rubber Washers(4x)

Figure 3

4
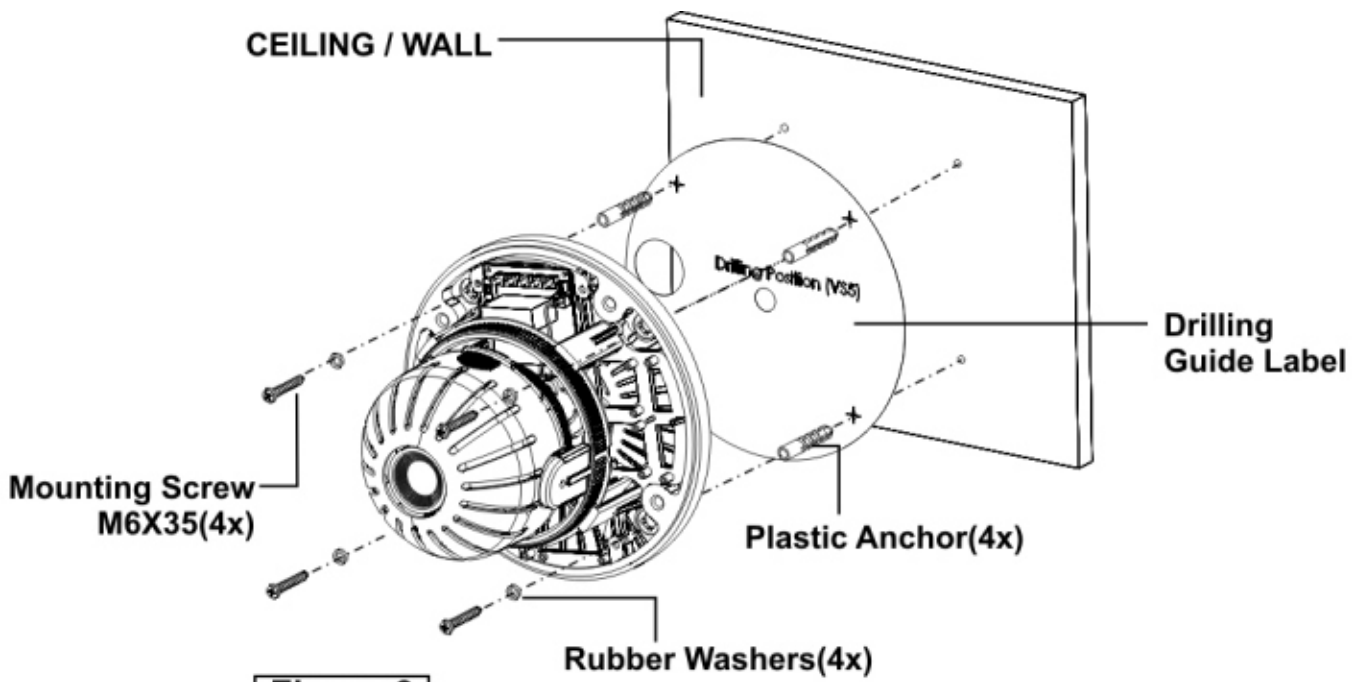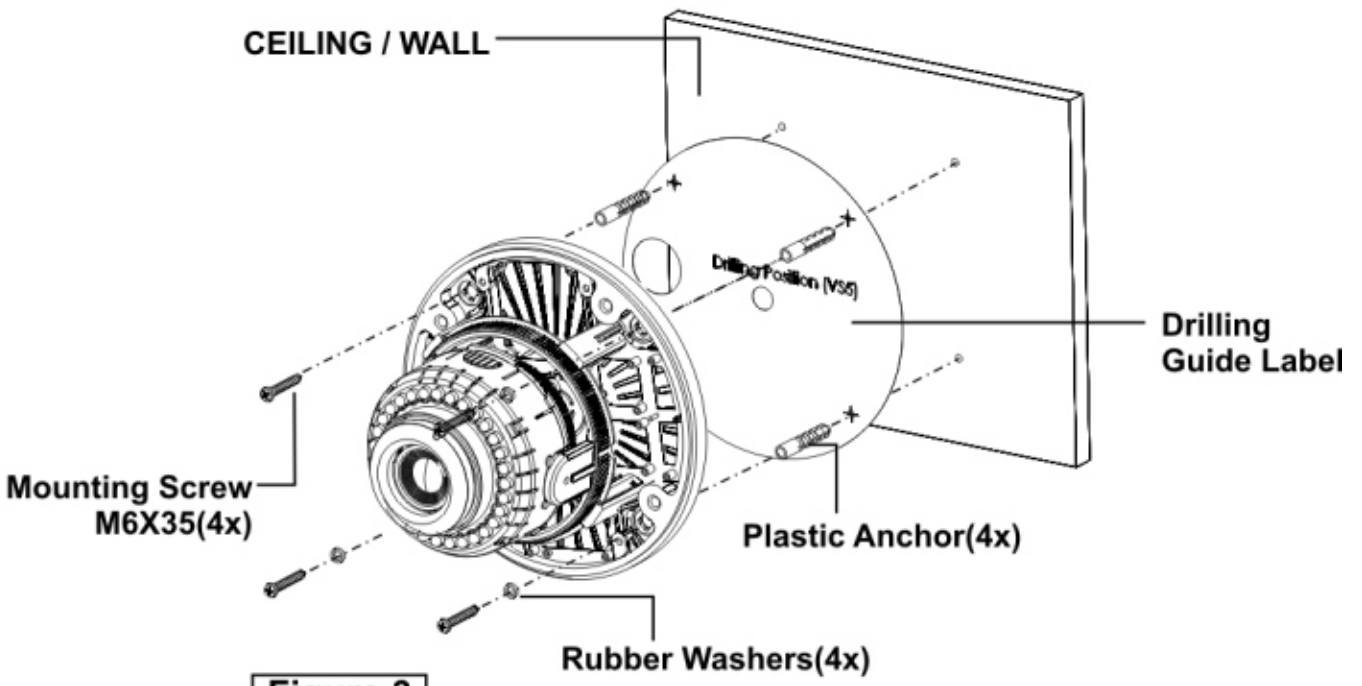
• MOUNTING HOUSING TO AN ELECTRICAL BACK BOX

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

Electrical box

Rubber Washers(4x)

Torx screws

IR camera

Electrical box

Rubber Washers(4x)

Torx screws

VIDEO OUT CHECK

TYPE - 1

Test Monitor

5 INCH COLOR TFT LCD

VIDEO OUT

SPOT VIDEO
CN2
DOWN
RIGHT
LEFT
UP
R1
R2
R3
R4

Joystick Switch Board

VIDEO IN
DC IN 12V 1.0A
(−) ● (+)

VIDEO IN

TYPE - 2

Test Monitor

5 INCH COLOR TFT LCD

VIDEO OUT

UP
LEFT
RIGHT
CN2
DOWN
SPOT VODEO

Joystick Switch Board

VIDEO IN
DC IN 12V 1.0A
(−) ● (+)

VIDEO IN

6
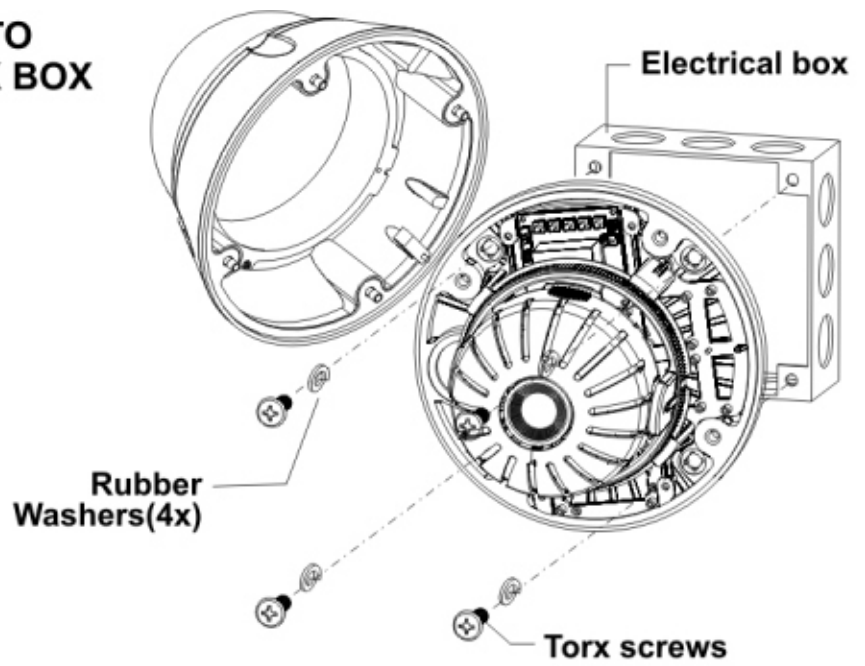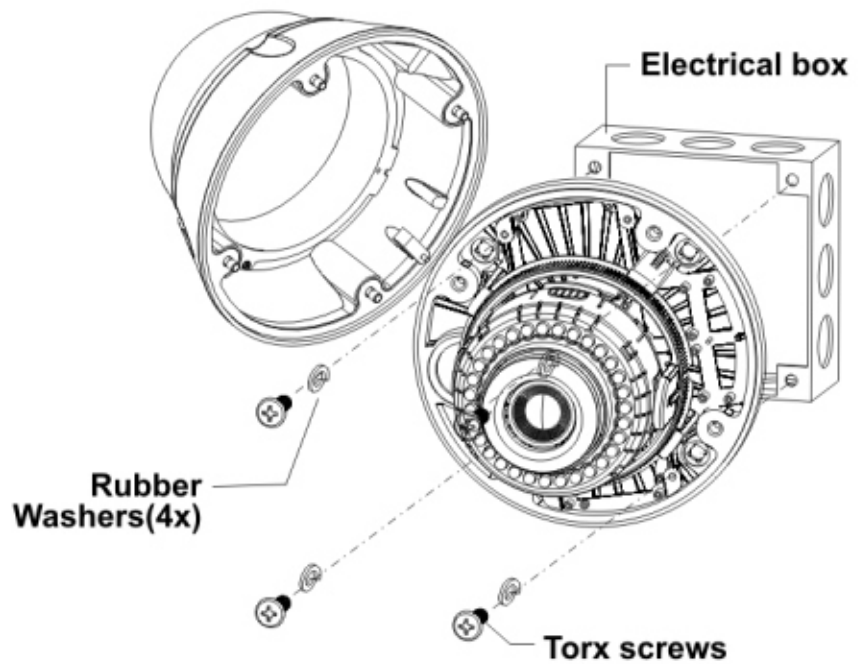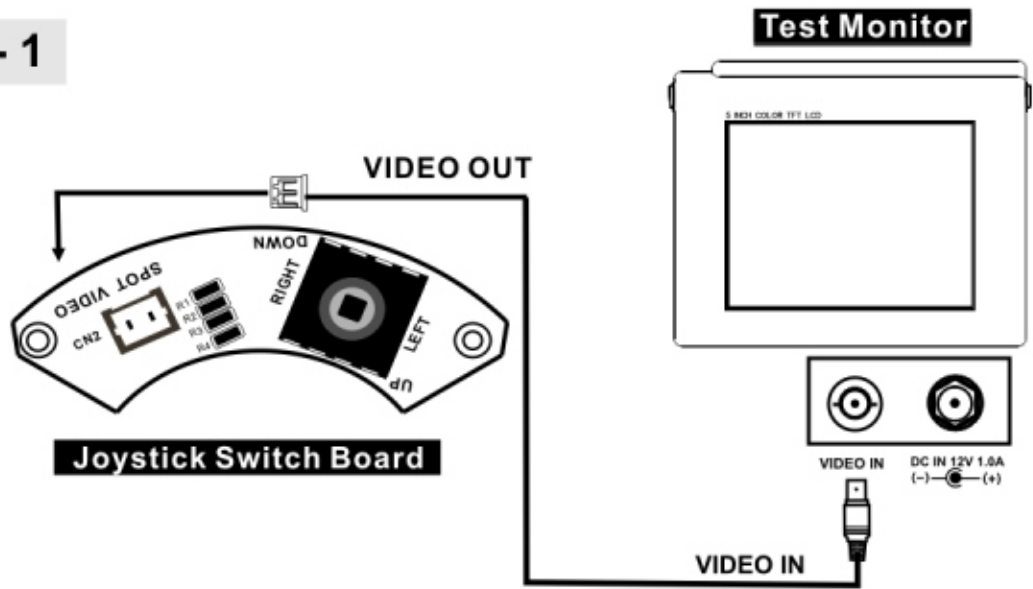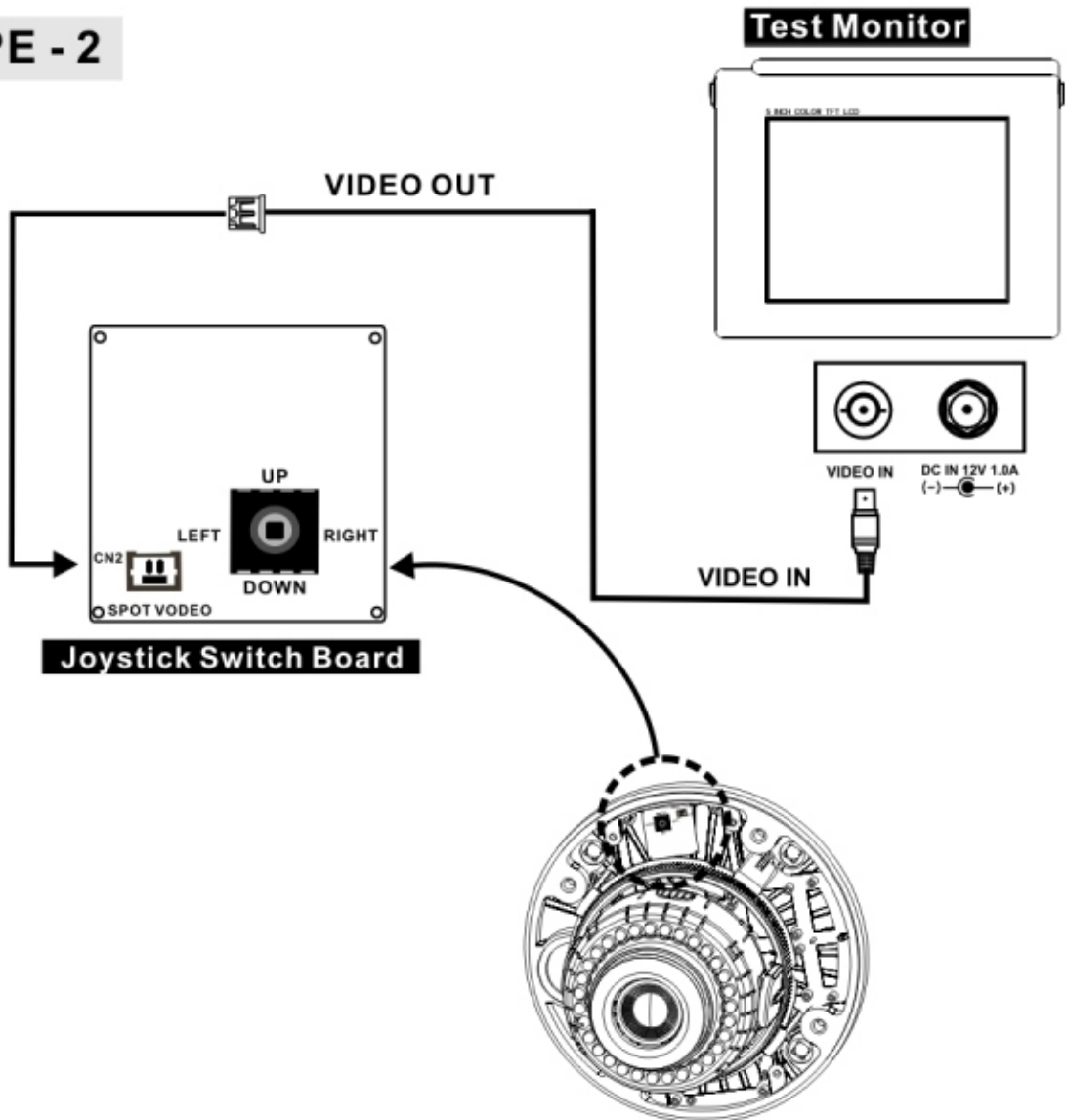
STRUCTURE OF THE SETUP MENU

<SETUP>

LENS
EXPOSURE
WHITE BAL
BACKLIGHT
DAY NIGHT
DPC
SPECIAL
IMAGE ADJ
RESET
EXIT

<LENS>

DC
MANUAL

<EXPOSURE>

SHUTTER
BRIGHTNESS
AGC
DWDR
RETURN

<WHITE BAL>

ATW1
ATW2
AWC -> SET
MANUAL

<BACKLIGHT>

OFF
BLC
HLC

<DAY NIGHT>

AUTO
COLOR
B/W
EXT

<DPC>

COVER THE LENS
THEN
PRESS ENTER KEY

<SPECIAL>

CAM TITLE
MOTION
PRIVACY
PARK.LINE
LANGUAGE
RETURN

<IMAGE ADJUST>

LENS SHAD.
2 DNR
MIRROR
FONT COLOR
CONTRAST
SHARPNESS
DISPLAY
NEG.IMAGE
RETURN

<RESET>

FACTORY
RETURN

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.

```
► LENS          DC               ► LENS          MANUAL
  EXPOSURE      ⏎                  EXPOSURE      ⏎
  WHITE BAL     ATW1               WHITE BAL     ATW1
  BACKLIGHT     OFF   ⏎            BACKLIGHT     OFF   ⏎
  DAY NIGHT     AUTO⏎              DAY NIGHT     AUTO⏎
  DPC           ⏎                  DPC           ⏎
  SPECIAL       ⏎                  SPECIAL       ⏎
  IMAGE ADJ     ⏎                  IMAGE ADJ     ⏎
  RESET         ⏎                  RESET         ⏎
  EXIT          ⏎                  EXIT          ⏎
```

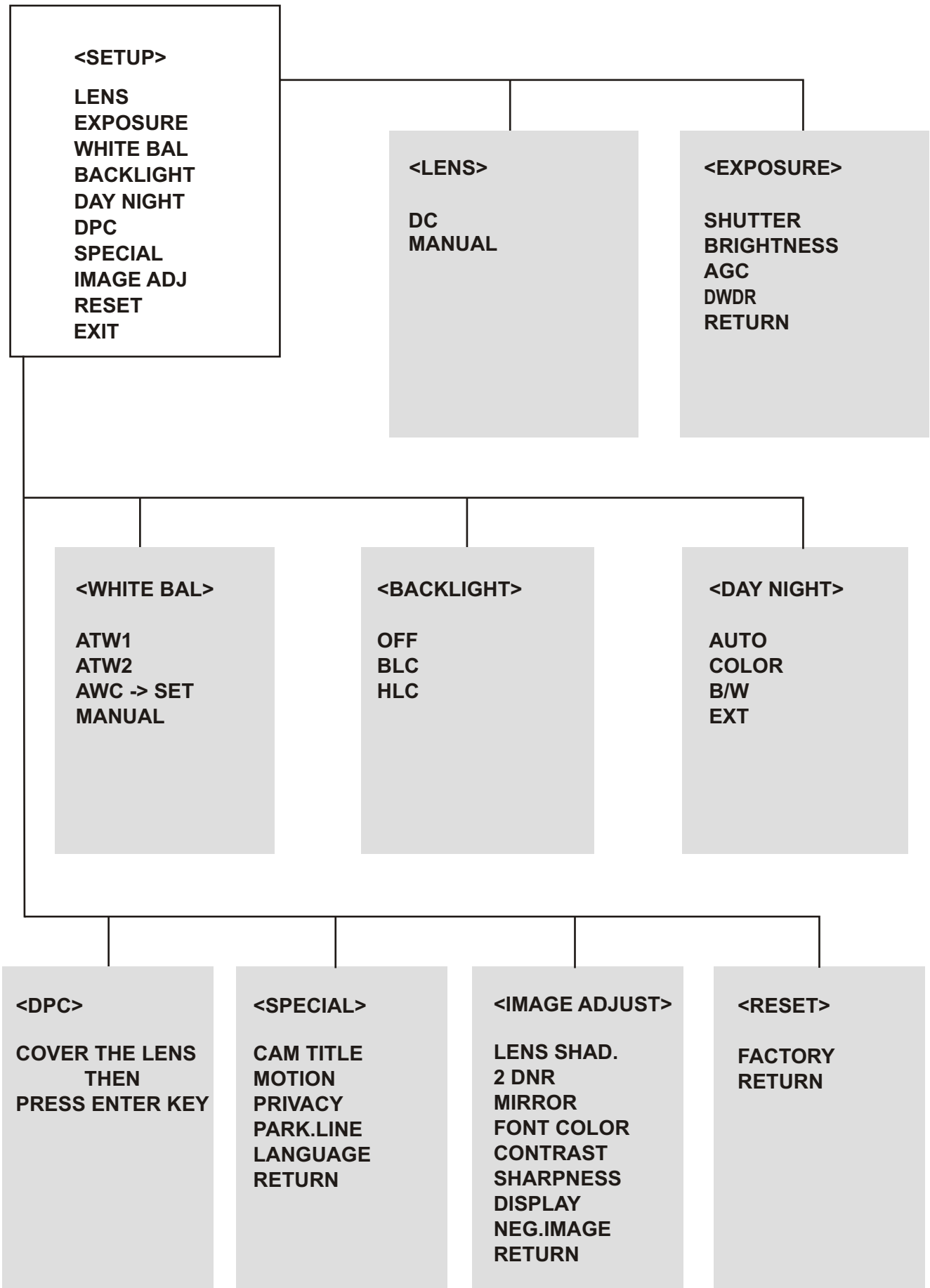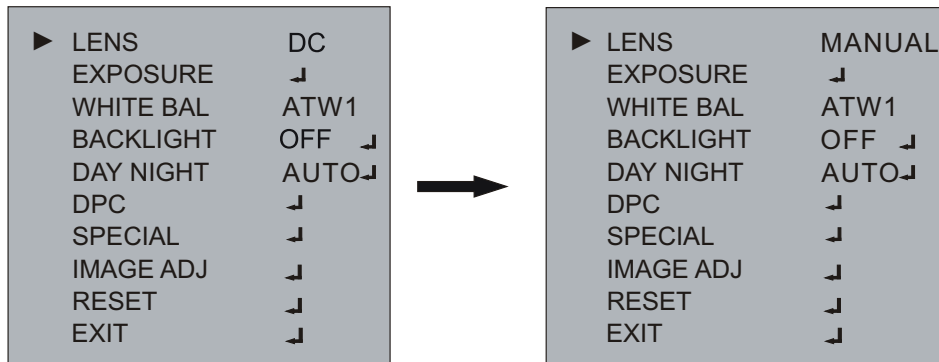**Note**   *The brightness of the screen can be adjusted in DC mode.*

EXPOSURE

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

1) SHUTTER   Select the shutter mode.(Auto,1/60(50), FLK~ 1/100,000 sec)
                     Can be changed while in shutter mode.

2) BRIGHTNESS   Adjust BRIGHTNESS level (0 ~ 255)
                     Can be adjusted while in DC/ manual lens mode.

3) AGC   Auto gain control (OFF / LOW / MIDDLE / HIGH)

4) DWDR   Digital Wide dynamic range(Xtended Dynamic Range)
                     OFF / ON

```
  LENS          DC                  EXPOSURE
► EXPOSURE      ⏎
  WHITE BAL     ATW1                SHUTTER     AUTO
  BACKLIGHT     OFF   ⏎             BRIGHTNESS  ⸽⸽⸽⸽⸽⸽⸽50
  DAY NIGHT     AUTO⏎               AGC         ----
  DPC           ⏎                   D-WDR       OFF ⏎
  SPECIAL       ⏎                   RETURN      RET ⏎
  IMAGE ADJ     ⏎
  RESET         ⏎
  EXIT          ⏎
```
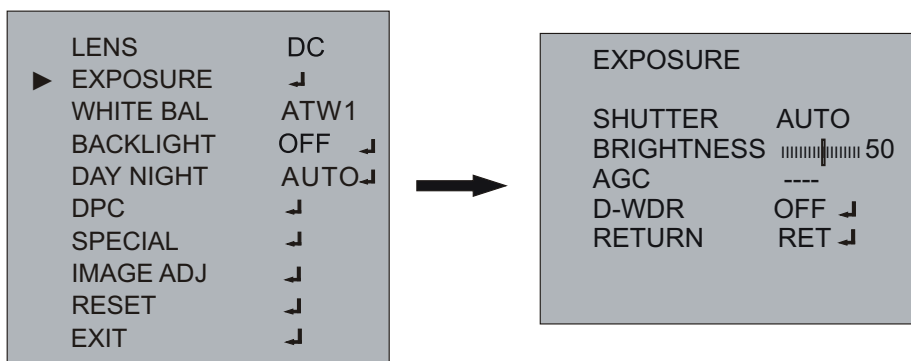
WHITE BAL

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

1) ATW1   Set the color temperature 2500°K 10000°K

2) ATW2   Set the color temperature 2000°K 13000°K

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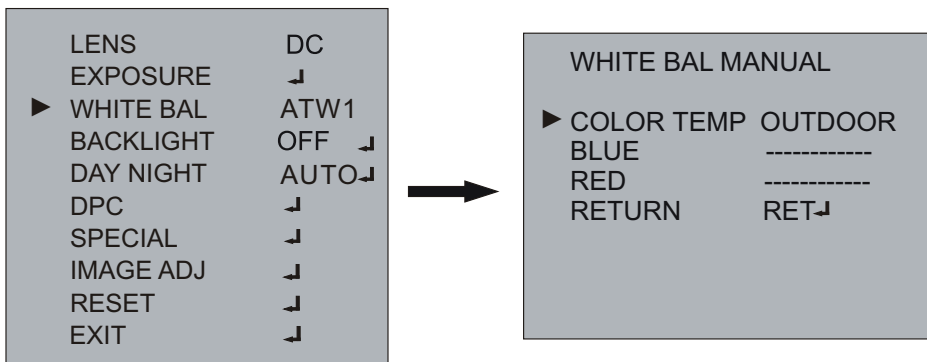current illumination. if the environment including the light source
is changed, you have to adjust the white balance again.

4) MANUAL   Manual mode. User can change R and B Gain manually.

      INDOOR   Set the color temperature to 3200°K
      OUTDOOR   Set the color temperature to 6300°K

\<WHITE BAL MANUAL MODE\>

```
    LENS          DC
    EXPOSURE      ↵
 ►  WHITE BAL     ATW1
    BACKLIGHT     OFF   ↵
    DAY NIGHT     AUTO↵
    DPC           ↵
    SPECIAL       ↵
    IMAGE ADJ     ↵
    RESET         ↵
    EXIT          ↵
```

```
    WHITE BAL MANUAL

 ►  COLOR TEMP  OUTDOOR
    BLUE           ------------
    RED            ------------
    RETURN         RET↵
```

BACKLIGHT

1) BLC   Prevents such a back light effect to secure a clear image under all
illumination environments.
Select Area 1 or Area 2 that can be adjustable.

2) HLC   The HLC function improves the identification capability of subjects facing
a brightly lit situation by filtering out the strength of the light.

\<BACKLIGHT MODE\>

```
    LENS          DC
    EXPOSURE      ↵
    WHITE BAL     ATW1
 ►  BACKLIGHT     OFF   ↵
    DAY NIGHT     AUTO↵
    DPC           ↵
    SPECIAL       ↵
    IMAGE ADJ     ↵
    RESET         ↵
    EXIT          ↵
```

```
    BACKLIGHT BLC

    AREA SEL      AREA1
    AREA STARE    ON
    GAIN          |||||||||||||042
    HEIGHT        |||||||||||005
    WIDTH         ||||||||||||004
    LEFT/RIGHT    ||||||||||005
    TOP/BOTTOM    |||||||||||||005
    RETURN        RET↵
```

```
    BACKLIGHT HLC

    LEVEL         ||||||||||||| 200
    MODE          NIGHT ONLY
    RETURN        RET↵
```
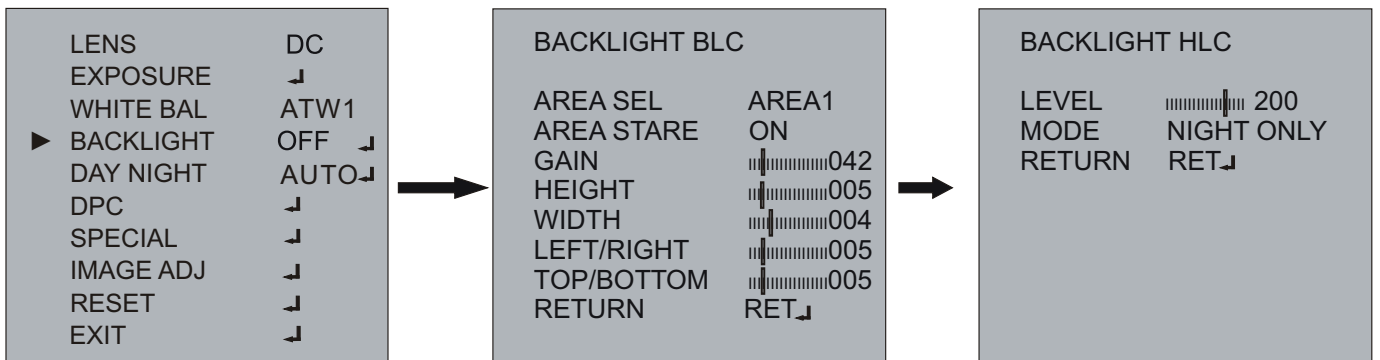
DAY NIGHT

The DAY/NIGHT menu is used to configure the day and night related setting for this camera.
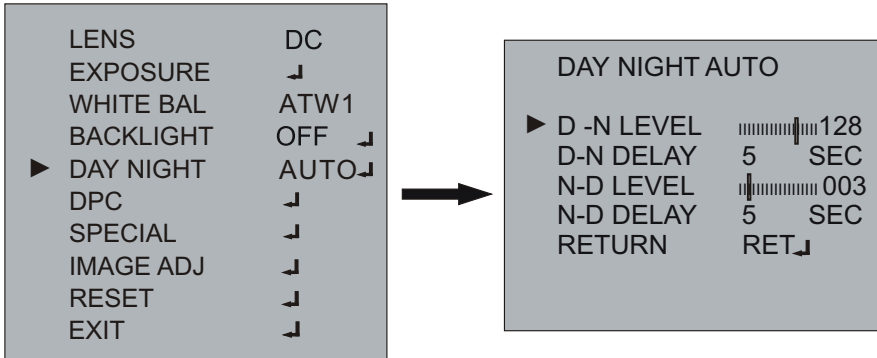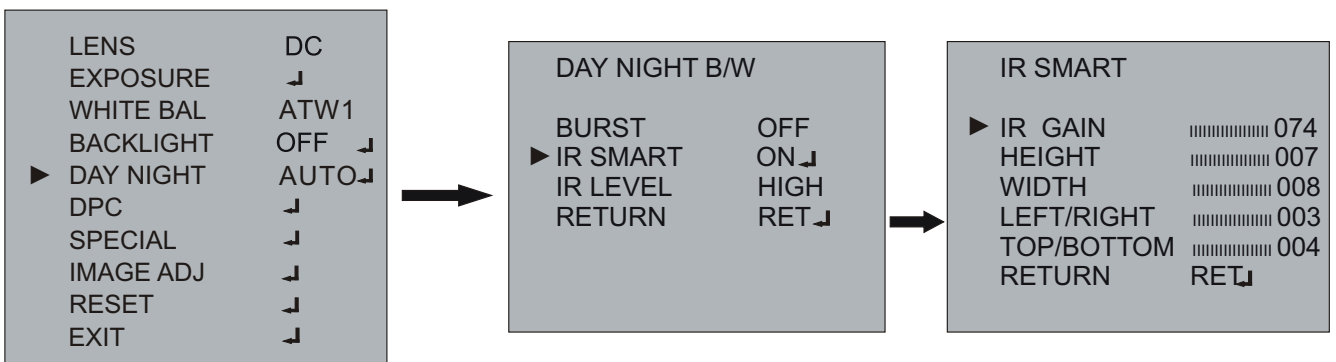This camera can turn the IR(infrared)filter on or off.
Mode : AUTO / COLOR / B/W / EXT (The EXT is not operating in this mode)
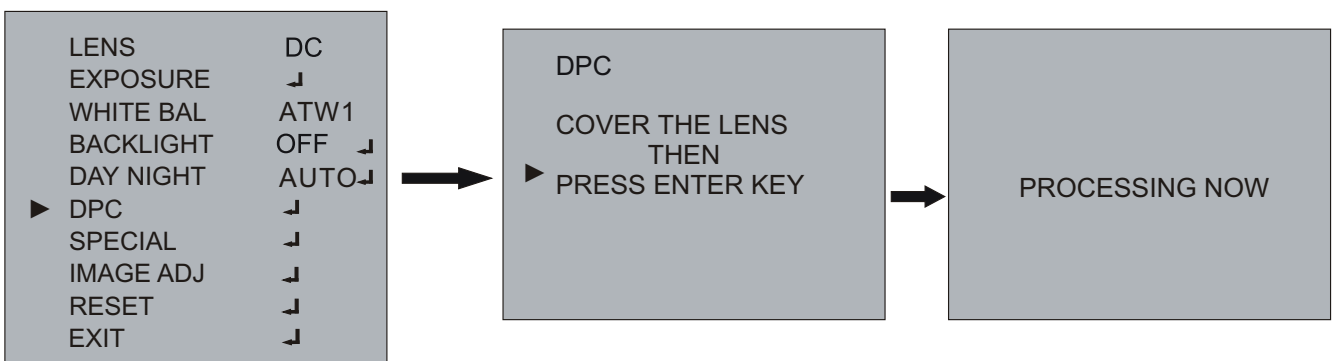
<DAY NIGHT AUTO MODE>

LENS	DC
EXPOSURE	↵
WHITE BAL	ATW1
BACKLIGHT	OFF ↵
► DAY NIGHT	AUTO↵
DPC	↵
SPECIAL	↵
IMAGE ADJ	↵
RESET	↵
EXIT	↵

DAY NIGHT AUTO

► D -N LEVEL	‖‖‖‖‖‖‖‖‖‖128
D-N DELAY	5 SEC
N-D LEVEL	‖‖‖‖‖‖‖‖‖ 003
N-D DELAY	5 SEC
RETURN	RET↵

<DAY NIGHT B/W MODE>

LENS	DC
EXPOSURE	↵
WHITE BAL	ATW1
BACKLIGHT	OFF ↵
► DAY NIGHT	AUTO↵
DPC	↵
SPECIAL	↵
IMAGE ADJ	↵
RESET	↵
EXIT	↵

DAY NIGHT B/W

BURST	OFF
► IR SMART	ON↵
IR LEVEL	HIGH
RETURN	RET↵

IR SMART

► IR GAIN	‖‖‖‖‖‖‖‖‖‖ 074
HEIGHT	‖‖‖‖‖‖‖‖‖‖ 007
WIDTH	‖‖‖‖‖‖‖‖‖ 008
LEFT/RIGHT	‖‖‖‖‖‖‖‖ 003
TOP/BOTTOM	‖‖‖‖‖‖‖‖‖‖ 004
RETURN	RET↵

∗The IR LEVEL is not operating in DAY NIGHT B/W mode.

DPC

DPC Auto setting (Dead pixels are automatically removed)

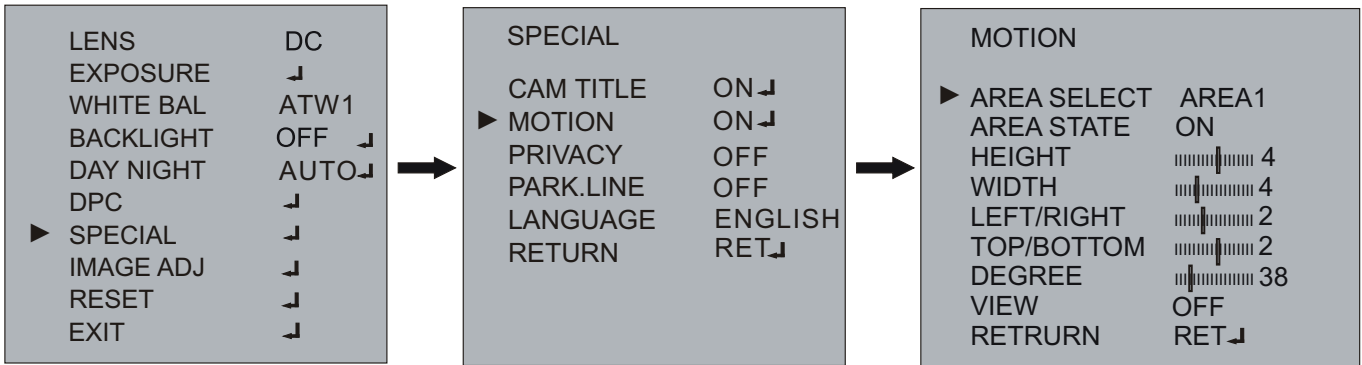| LENS	DC
EXPOSURE	↵
WHITE BAL	ATW1
BACKLIGHT	OFF ↵
DAY NIGHT	AUTO↵
► DPC	↵
SPECIAL	↵
IMAGE ADJ	↵
RESET	↵
EXIT	↵

DPC

    COVER THE LENS
           THEN
► PRESS ENTER KEY

PROCESSING NOW

SPECIAL

1) CAM TITLE

```
A ——————  CAM TITLE
             0123456789
             ABCDEFGHIJK
             LMNOPQRSTUV
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) MOTION

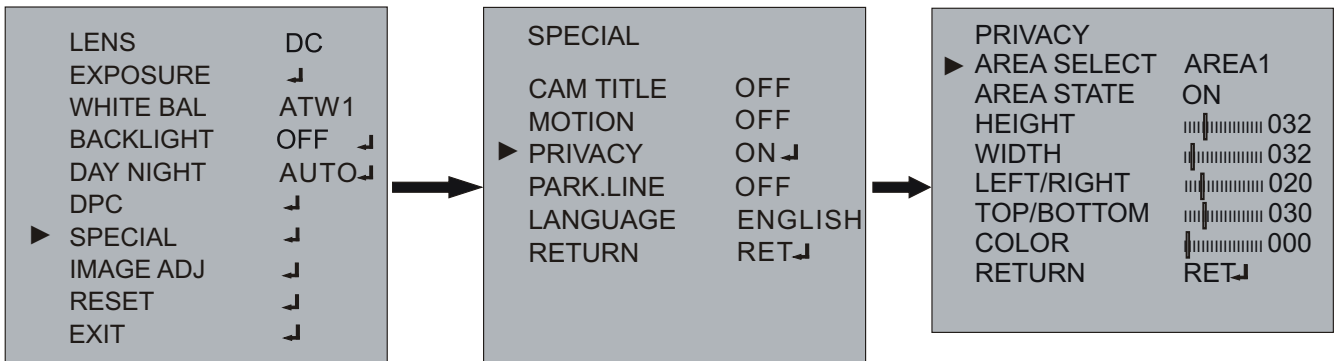|	
AREA SELECT	Select MD area number. (AREA1 ~AREA4)
AREA STATE	Select MD ON/OFF
HEIGHT	Adjust height of MD area
WIDTH	Adjust width of MD area
LEFT/RIGHT	Adjust the location of the MD area with boundary LEFT and RIGHT.
TOP/BOTTOM	Adjust the location of the MD area with boundary TOP and BOTTOM
DEGREE	Adjust sensitivity of MD area.(0~255)
VIEW	When set to "on", the screen displays with pink dots.
	When a motion is detected in the selected area, the pink dots are displayed on the screen.

```
 LENS          DC
 EXPOSURE      ⌐
 WHITE BAL     ATW1
 BACKLIGHT     OFF   ⌐
 DAY NIGHT     AUTO⌐
 DPC           ⌐
►SPECIAL       ⌐
 IMAGE ADJ     ⌐
 RESET         ⌐
 EXIT          ⌐
```
→
```
 SPECIAL

 CAM TITLE     ON⌐
►MOTION        ON⌐
 PRIVACY       OFF
 PARK.LINE     OFF
 LANGUAGE      ENGLISH
 RETURN        RET⌐
```
→
```
 MOTION

►AREA SELECT   AREA1
 AREA STATE    ON
 HEIGHT        ||||||||| 4
 WIDTH         |||||||||| 4
 LEFT/RIGHT    |||||||| 2
 TOP/BOTTOM    |||||||||| 2
 DEGREE        ||||||||| 38
 VIEW          OFF
 RETRURN       RET⌐
```
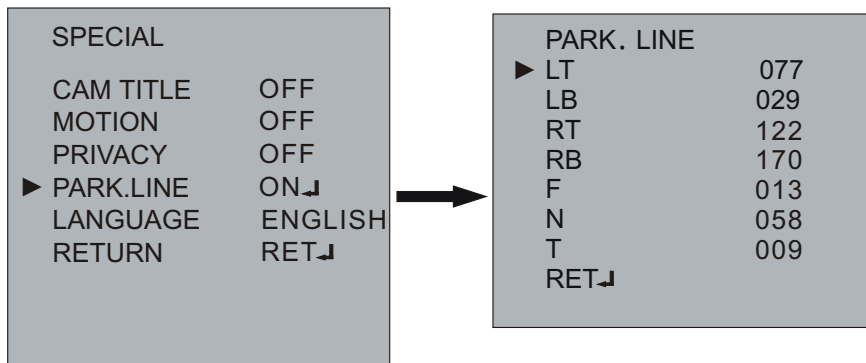
3) PRIVACY

AREA SELECT	Select MASK area number.(Area 1 ~ Area 8)
AREA STATE	Select MASK ON/OFF
HEIGHT	Adjust height of MASK area
WIDTH	Adjust width of MASK area
LEFT/RIGHT	Adjust the location of the MASK area with boundary LEFT and RIGHT
TOP/BOTTOM	Adjust the location of the MASK area with boundary TOP and BOTTOM.
COLOR	Select MASK color. (0~15)
RETURN	

<PRIVACY MODE>

```
LENS          DC
EXPOSURE      ↵
WHITE BAL     ATW1
BACKLIGHT     OFF  ↵
DAY NIGHT     AUTO↵
DPC           ↵
► SPECIAL     ↵
IMAGE ADJ     ↵
RESET         ↵
EXIT          ↵
```
→
```
SPECIAL

CAM TITLE     OFF
MOTION        OFF
► PRIVACY     ON ↵
PARK.LINE     OFF
LANGUAGE      ENGLISH
RETURN        RET↵
```
→
```
PRIVACY
► AREA SELECT   AREA1
AREA STATE      ON
HEIGHT          ▬▬▬ 032
WIDTH           ▬▬▬ 032
LEFT/RIGHT      ▬▬▬ 020
TOP/BOTTOM      ▬▬▬ 030
COLOR           ▬▬▬ 000
RETURN          RET↵
```

4) PARK.LINE   Select Parking area

```
SPECIAL

CAM TITLE     OFF
MOTION        OFF
PRIVACY       OFF
► PARK.LINE   ON↵
LANGUAGE      ENGLISH
RETURN        RET↵
```
→
```
PARK. LINE
► LT          077
LB            029
RT            122
RB            170
F             013
N             058
T             009
RET↵
```

5) LANGUAGE   ENGLISH or CHINESE

6) RETURN   RET

IMAGE ADJUST

1) LENS SHAD   Adjust Lens shading level (0~255)

2) 2DNR   Select 2DNR ON/OFF

3) MIRROR   Select MIRROR ON/OFF

4) FONT COLOR   Select FONT COLOR level (0~15)

                               Select IDR TITLE level (0~15)

5) CONTRAST   Adjust CONTRAST level (0~255)

6) SHARPNESS   Adjust SHARPNESS level (0~31)

7) DISPLAY   Select DISPLAY mode (CRT /LCD/USER)

8) NEG. IMAGE   Select Negative image mode ON /OFF
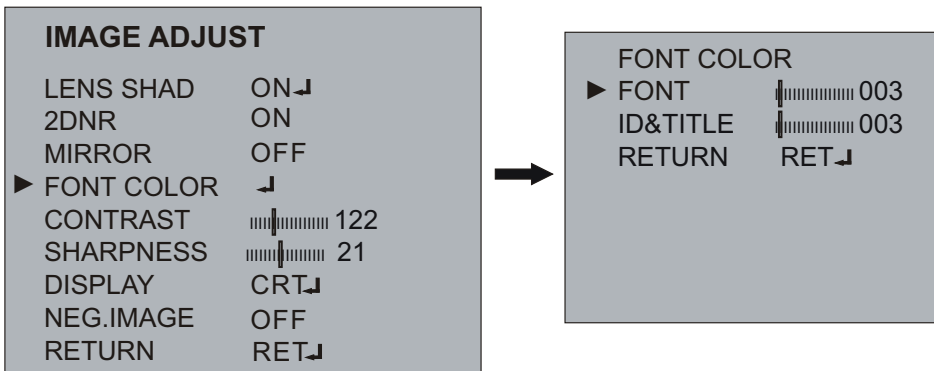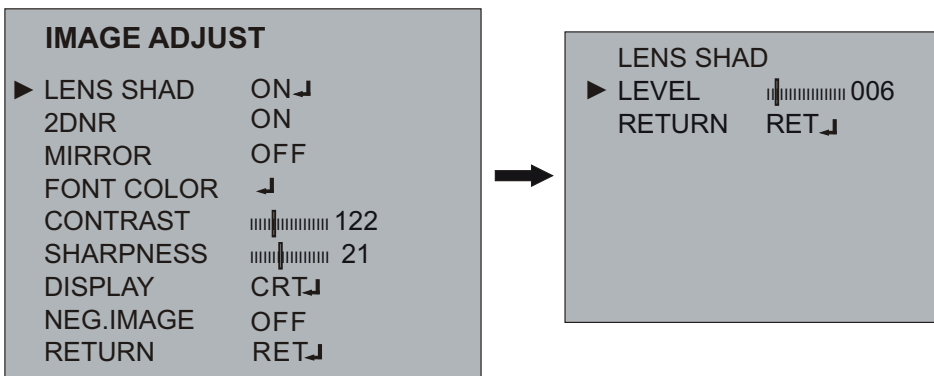
<IMAGE ADJUST MODE>

```
IMAGE ADJUST

► LENS SHAD      ON↵
  2DNR           ON
  MIRROR         OFF
  FONT COLOR     ↵
  CONTRAST       ||||||||||| 122
  SHARPNESS      ||||||||||| 21
  DISPLAY        CRT↵
  NEG.IMAGE      OFF
  RETURN         RET↵
```

```
LENS SHAD
► LEVEL        |||||||||| 006
  RETURN       RET↵
```

```
IMAGE ADJUST

  LENS SHAD      ON↵
  2DNR           ON
  MIRROR         OFF
► FONT COLOR     ↵
  CONTRAST       ||||||||||| 122
  SHARPNESS      ||||||||||| 21
  DISPLAY        CRT↵
  NEG.IMAGE      OFF
  RETURN         RET↵
```

```
FONT COLOR
► FONT         |||||||||| 003
  ID&TITLE     |||||||||| 003
  RETURN       RET↵
```

```
IMAGE ADJUST

LENS SHAD      ON↵
2DNR           ON
MIRROR         OFF
FONT COLOR     ↵
CONTRAST       ⸾⸾⸾|⸾⸾⸾⸾⸾ 122
SHARPNESS      ⸾⸾⸾⸾|⸾⸾⸾ 21
► DISPLAY      CRT↵
NEG.IMAGE      OFF
RETURN         RET↵
```

```
CRT  ADJUST
► PED LEVEL      ⸾⸾|⸾⸾⸾⸾⸾⸾ 022
  COLOR GAIN    ⸾⸾⸾⸾⸾⸾|⸾ 192
  RETURN        RET↵
```

```
LCD  AJUST
► GAMMA          0.50
  PED LEVEL      ⸾|⸾⸾⸾⸾⸾⸾⸾ 028
  COLOR GAIN     ⸾⸾⸾⸾⸾|⸾⸾ 160
  RETURN         RET↵
```

```
USER  AJUST
► GAMMA          0.45
  PED LEVEL      ⸾|⸾⸾⸾⸾⸾⸾⸾ 028
  COLOR GAIN     ⸾⸾⸾⸾⸾|⸾⸾ 160
  RETURN         RET↵
```

RESET
1) FACTORY   Returns to the level which was set by the manufacturer for shipment.
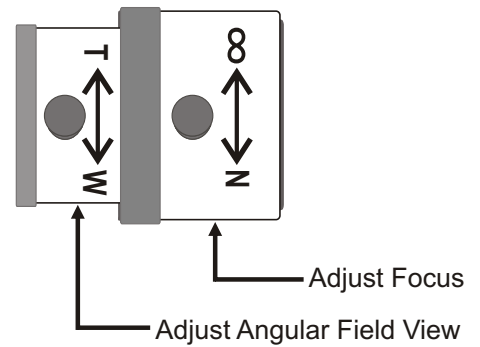

EXIT
1) EXIT   Saves all the setting menus and then exits.
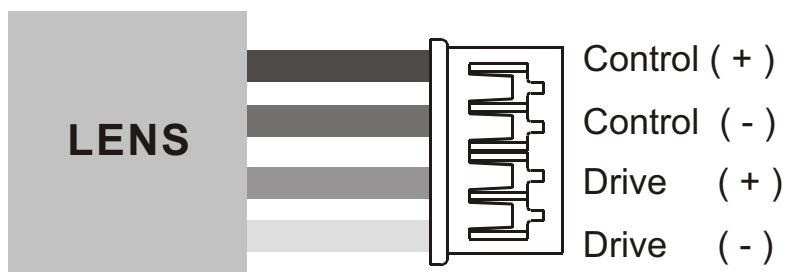
LENS ADJUSTMENT (OPTIONAL VARIFOCAL LENS)

Field of view: Adjust setting from Tele (T) to Wide (W) field of View.

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

Adjust Focus

Adjust Angular Field View

DC AUTO IRIS LENS

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

LENS

Control (+)

Control (-)

Drive   (+)

Drive   (-)
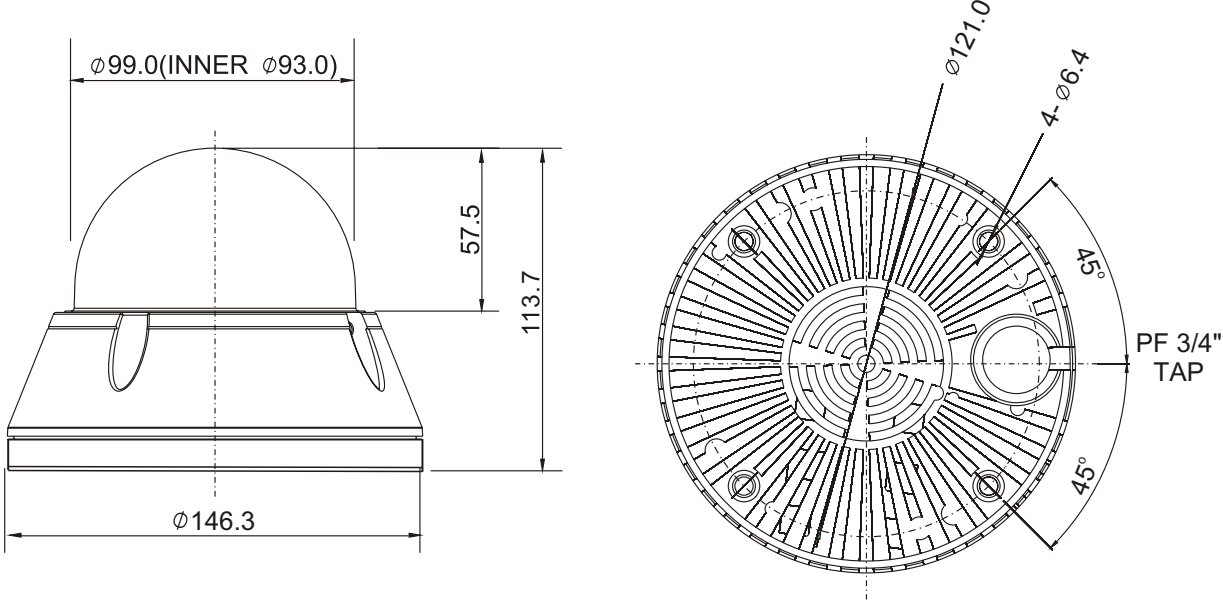
SPECIFICATIONS

MODEL		NTSC	PAL	DC12V
Power	Power source	AC24V ± 10%		DC12V ± 10%
	Power consumption	200mA (2.5 Watts)		150mA (2.0 Watts)
General	Image sensor	1/3" Sony Super HAD Ⅱ		
	Total pixels	811(H) x 507(V)	795(H) x 595(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 ~ 1/100,000 sec.	1/50 ~ 1/100,000 sec.	←
	Resolution	600 TV lines (COLOR)		
	Min. illumination	0.1 Lux(Color), 0.04 Lux(B/W) @ F1.2, 50IRE		
	Video Output	1.0 Vp-p (75 ohm, Composite)		
	S/N Ratio	More than 50dB (AGC off)		
	Camera Control	OSD (Joystick Switch)		
FUNCTION	Lens	MANUAL / DC		
	Shutter	AUTO, 1/60(1/50), Flickeless, 1/250 ~ 1/100,000sec		
	Brightness	0 ~255		
	Backlight	OFF / BLC / HLC(High Light Compensation)		
	AGC	OFF / LOW / MIDDLE / HIGH		
	DWDR	OFF/ON		
	White Balance	ATW1 / ATW2 / AWC->SET / MANUAL		
	Day & Night	AUTO / COLOR / B&W / EXT		
D&N B/W	Burst	OFF / ON		
	IR Smart	OFF / ON		
	IR Smart Gain	0~255		
SPECIAL	Camera Title	OFF / ON		
	Motion Detection	OFF / ON (4 area)		
	Privacy Masking	OFF / ON (8 position)		
	Parking Line	OFF / ON		
	Lens Shading	OFF / ON(0~255)		
	2DNR	OFF / ON		
	Mirror	OFF / ON		
	Font Color	FONT 16 COLOR, ID&TITLE 16 COLOR		
	Contrast	0~255		
	Sharpness	0~31		
	Display	CRT / LCD / USER		
	Nega Image	OFF / ON		
	Language	ENGLISH / CHINESE		
	DPC	Dead Pixel Cancellation (Auto 64 Points)		
	Reset	FACTORY RESET / RETURN		
Connector & etc.	Power input	2-pin Terminal Block		DC Jack
	Video output	BNC connector		
	Lens Mount	Fixed mount		
	Lens	f=2.8~12mm F1.2~360 Varifocal, ICR (D&N)		
	Operating temperature	14°F ~ 122°F (-10°C ~ +50°C)		
	Operating humidity	0 ~ 96% (non-condensing)		
	External Dimension	146(∅) x 113(H) mm		
	Weight	700g		

SPECIFICATIONS - IR CAMERA ONLY

	MODEL	NTSC	PAL
Power	Power source	AC24V ± 10% / DC12V ± 10%	
	Power consumption	410mA (5 Watts) - IR LED ON	
General	Image sensor	1/3" Sony Super HAD II	
	Total pixels	811(H) x 507(V)	795(H) x 595(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 ~ 1/100,000 sec.	1/50 ~ 1/100,000 sec.
	Resolution	600 TV lines (COLOR)	
	Min. illumination	0.1 Lux(Color), 0 Lux(B/W, IR LED ON) @ F1.2, 50IRE	
	IR LED / Sensor	IR LED 30EA(850nm / 40 degree) , Sensor 1EA	
	LED Lighting Distance	30m	
	Video Output	1.0 Vp-p (75 ohm, Composite)	
	S/N Ratio	More than 50dB (AGC off)	
	Camera Control	OSD (Joystick Switch)	
FUNCTION	Lens	MANUAL / DC	
	Shutter	AUTO, 1/60(1/50), Flickeless, 1/250 ~ 1/100,000sec	
	Brightness	0 ~255	
	Backlight	OFF / BLC / HLC(High Light Compensation)	
	AGC	OFF / LOW / MIDDLE / HIGH	
	DWDR	OFF/ON	
	White Balance	ATW1 / ATW2 / AWC->SET / MANUAL	
	Day & Night	AUTO / COLOR / B&W / EXT	
	D&N B/W Burst	OFF / ON	
	IR Smart	OFF / ON	
	IR Smart Gain	0~255	
	SPECIAL Camera Title	OFF / ON	
	Motion Detection	OFF / ON (4 area)	
	Privacy Masking	OFF / ON (8 position)	
	Parking Line	OFF / ON	
	Lens Shading	OFF / ON(0~255)	
	2DNR	OFF / ON	
	Mirror	OFF / ON	
	Font Color	FONT 16 COLOR, ID&TITLE 16 COLOR	
	Contrast	0~255	
	Sharpness	0~31	
	Display	CRT / LCD / USER	
	Nega Image	OFF / ON	
	Language	ENGLISH / CHINESE	
	DPC	Dead Pixel Cancellation (Auto 64 Points)	
	Reset	FACTORY RESET / RETURN	
Connector & etc.	Power input	2-pin Terminal Block	
	Video output	BNC connector	
	Lens Mount	Fixed mount	
	Lens	f=2.8~12mm F1.2~360 Varifocal, ICR (D&N)	
	Operating temperature	14°F ~ 122°F (-10°C ~ +50°C)	
	Operating humidity	0 ~ 96% (non-condensing)	
	External Dimension	146(∅) x 113(H) mm	
	Weight	700g	

EXTERNAL DIMENSION

Dimensions

⌀99.0(INNER ⌀93.0)

57.5

113.7

⌀146.3

⌀121.0

4-⌀6.4

45°

45°

PF 3/4" TAP

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:	1.54 lb. (0.7kg) 2.11 lb. (0.96 kg)