

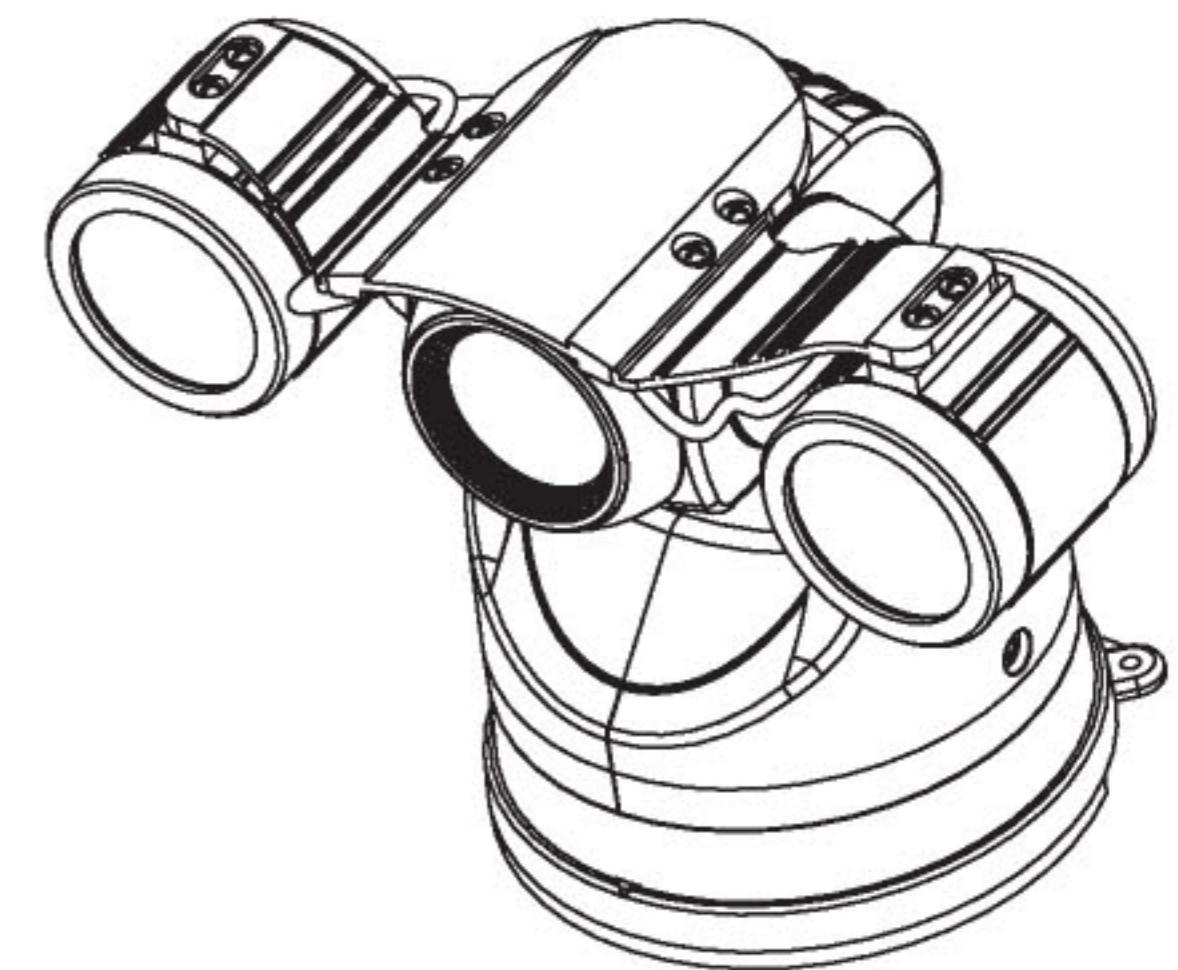
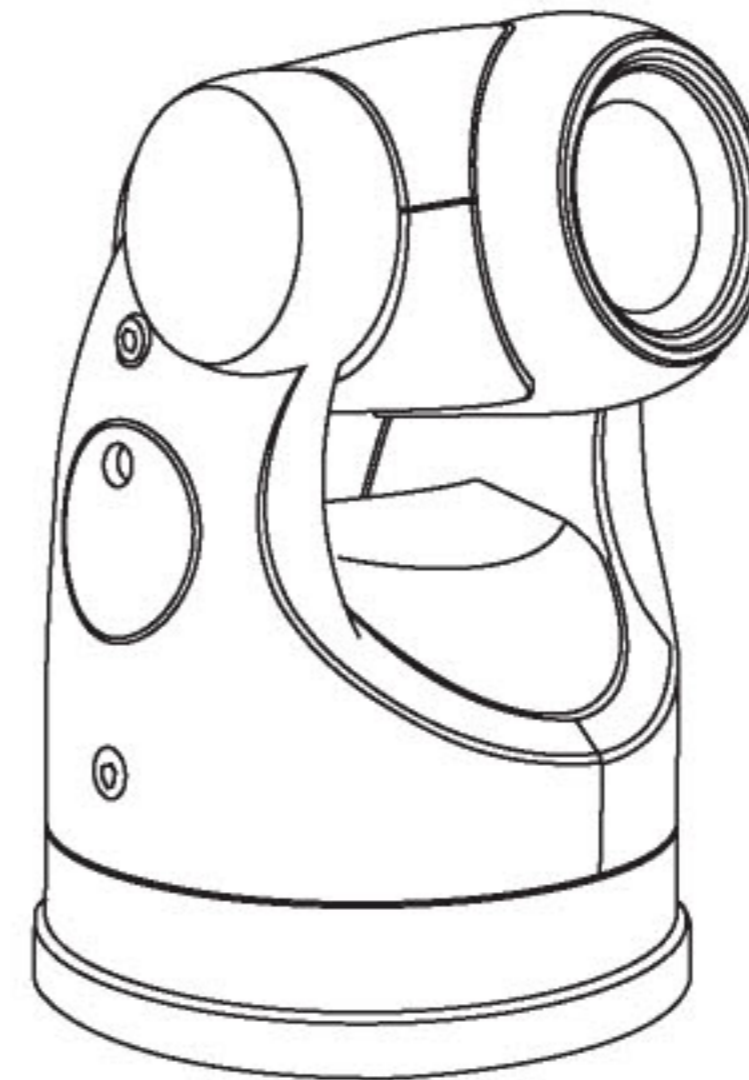
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**W-388057125  
PRINTED IN KOREA**

**Installation / Operating Manual**

## **10X Day&Night MINI PTZ CAMERA**

**WCM-101N  
WCM-101P**



**WCM-101NR  
WCM-101PR**

Before attempting to connect or operate this product,  
please read these instructions carefully and save this manual for future use

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## USER INFORMATION



**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.



The lightning flash with an 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 appliance.

### FCC COMPLIANCE STATEMENT

**INFORMATION**-This equipment has been tested and found to comply with 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**-Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

**CAUTION :** To prevent electric shock and risk of fire hazards:

- Do NOT use power sources other than that specified.
- Do NOT expose this appliance to rain or moisture.

\* This installation should be made by a qualified service person and should conform to all local codes.

## :: FEATURES

The WCM-101 series is a compact 10X Day&Night PTZ camera which can be applied in any application. This camera is packaged in a rugged aluminum die-cast housing with a built-in high speed pan/tilt mechanism (WCM-101 : Pan 360° endless, Tilt 235° / WCM-101R : Pan 360° endless, Tilt 135°), which provides faster and more coverage than multiple fixed cameras.

This camera offers a number of advanced features and functions; OSD menu control, Preset, Tour, Scan, and Pattern. By utilizing the 63 programmable Presets, 4-minute Pattern (WCM-101 : Pan 360° endless, Tilt 235° / WCM-101R : Pan 360° endless, Tilt 135°), auto-pan and continuous scan mode, the WCM-101 can cover a broader range.

Vector Control Position is very useful when interfaced with IP surveillance systems, DVR's, or other equipment.

- Wall, Ceiling or Top mount are available
- Aluminum construction of body
- 1/4 inch Interline Transfer CCD
- Optical 10X (F3.8~38mm) and 10x Digital zoom support
- 360° pan, 235° tilt angle, Max. 110°/sec pan speed
- ICR removable Day&Night (workable with IR illuminator)
- DNR technology enabled DVR hard disk saver
- Easy operation with OSD menu
- Various Auto surveillance functions
  - Preset - Up to 63 programmable preset.
  - Scan - Repeatedly pan operating between two positions. (Max. 4)
  - Tour - Up to 8 programmable Tours consisting of presets with individual dwell time
  - Pattern - Up to 4 programmable Patterns
  - Area - Up to 4 programmable Area display set.
  - Privacy zone masking - Up to 4 programmable mask area
  - Alarm- Move the camera to programmed Preset position with Alarm trigger (Max. 2)
- Auto Flip support
- Multiple Protocol (Pleco-D/ P)
- 10 Pie Infrared LED 13PCS (WCM-101R only)
- Visible 30M distance (Indoor)

## :: PRECAUTIONS

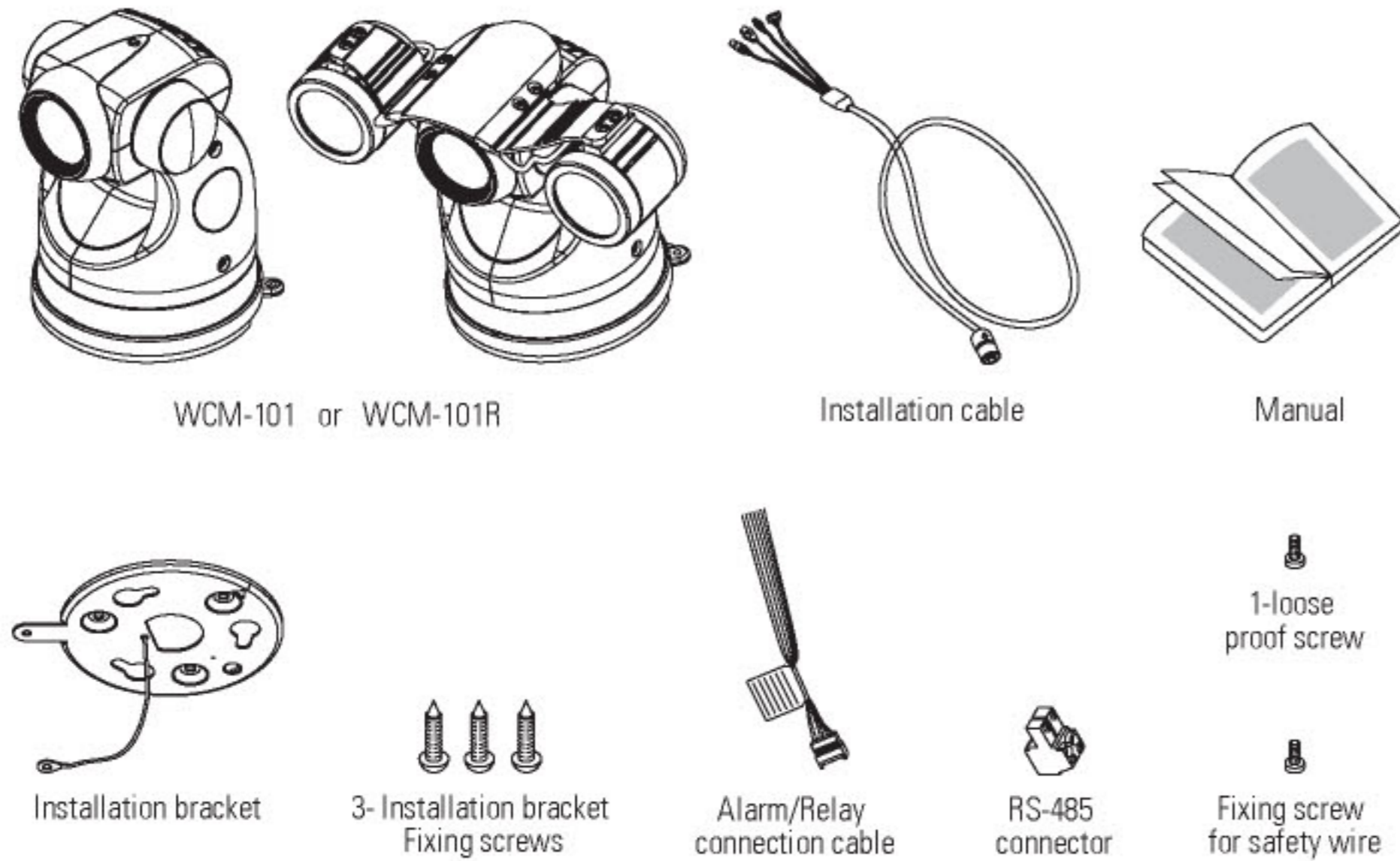
- Do not install the camera in extreme temperature conditions.  
Do use the camera under conditions where temperatures are within -10°C to 50°C.  
Under high temperatures, ensure proper ventilation.
- Do not install or use the camera in an environment where the humidity is high.  
It can cause the image quality to be poor.
- Do not install the camera under unstable lighting conditions.  
Severe lighting change or flicker can cause the camera to work improperly.
- Never use the camera close to a gas or oil leak.  
It can cause malfunctions to occur.
- Do not disassemble the camera.  
There are no user-serviceable parts inside it.
- Do not drop the camera or subject them to physical shocks.  
It can cause malfunctions to occur.
- Do not allow direct sunlight into the camera.  
It can damage CCD.
- Do not expose the camera to rain or spill beverages on it.  
If it gets wet, wipe it dry immediately. Liquids can contain minerals that corrode the electronic components.
- Note  
*If the camera is exposed to spotlight or object reflecting the strong light, smear or blooming may occur.  
Please check the power whether it satisfies the normal specification before connecting the camera.*

## PTZ SETTING & INSTALLATION

### Box Contents

Unpack carefully. Electronic components can be damaged if improperly handled or dropped. If an item appears to have been damaged in shipment, replace it properly in its carton and notify the shipper.

Save the shipping carton and packaging material. They are the safest material in which to make future shipments of the equipment. Keep this Installation and Operating Manual.



### Preparation for installation

To install and use the WCM-101, the following is required. (NOT included in box)

- 1) Power adaptor (DC12V, Over 2A)  
The power adaptor should be DC12V and over 2A. For better image quality and lower failure rate, min 2A or higher is required.
- 2) BNC cable for video signal.  
BNC connectors and coaxial cables are closely related with the quality of the camera image.
- 3) RS-485 communication cable (Twist pair)  
According to the RS-485 standards, the maximum cable length is 1.2Km

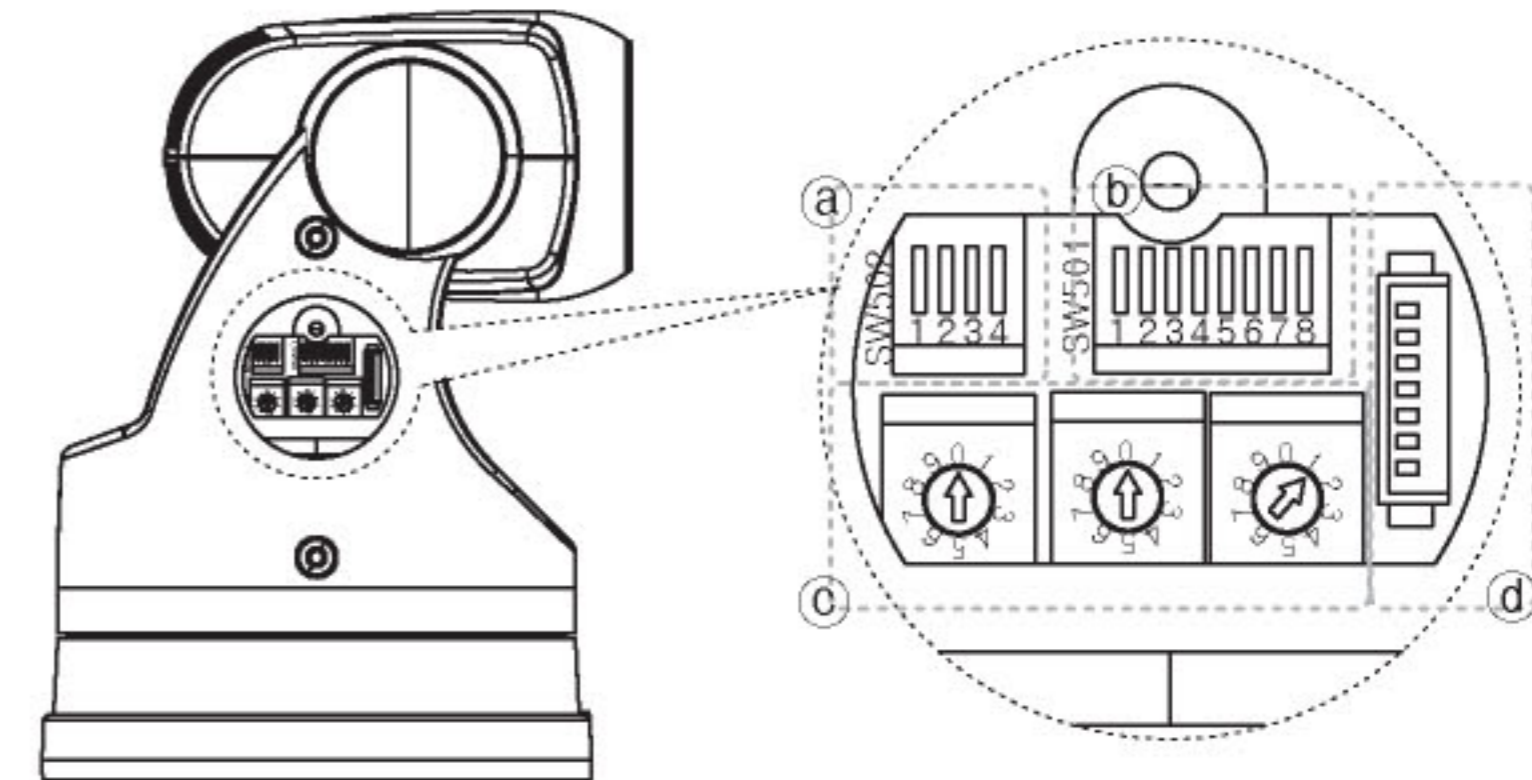
## PTZ SETTING & INSTALLATION

Camera should be installed by qualified service personnel in accordance with all local and federal electrical and building codes. The system should be installed according to as described

### 1.PTZ setup (DIP switch)

To set the camera ADDRESS and PROTOCOL, open the cap on the left side of PTZ. There are 12 DIP switches, 3 dial switches and 1 connector for the camera program update.

- (a) (SW502) : Set the termination, Camera installation mode and Camera video format.
- (b) (SW501) : Set the communication protocol, baud rate and protocol parity
- (c) (SW503-505) : Set the camera address
- (d) : Camera program update port (Need Special update tool kit)



#### (a) SW502

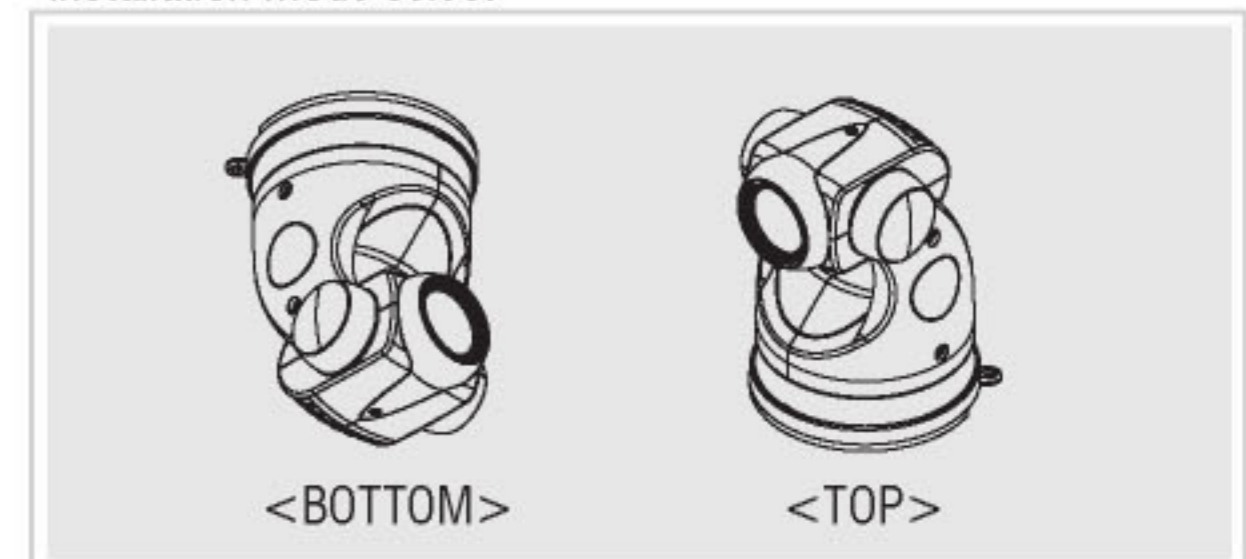


#### SW502

Reserved	1	TERMINATION	2	INSTALLATION	3	VIDEO FORMAT		4
-	-	ON	ON	BOTTOM	ON	PAL	ON	
-	-	OFF	OFF	TOP	OFF	NTSC	OFF	

1. Reserved
2. Set the RS-485 Termination  
ON: RS-485  
OFF: Null.
3. Select Installation mode  
ON: Bottom, OFF: TOP mode
4. Select Video format  
ON: PAL, OFF: NTSC

#### Installation mode select

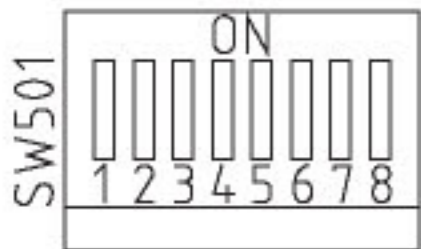


## PTZ SETTING & INSTALLATION

### RS-485 Setting

For RS-485 communication, the first and last devices (PTZ or keyboard controller) should be terminated for more stable data communication by setting the DIP switches. Without proper termination, there is potential for control signal error. Total length of the cable for communication should NOT exceed 1.2Km (twisted pair). To extend the distance, use a reliable RS-485 repeater.

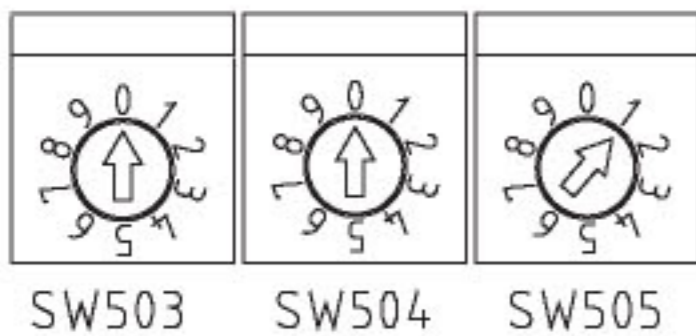
#### SW501 (Protocol select)



SW501

PARITY	1		BAUDRATE			PROTOCOL	6			
	1	2	3	4	5		6	7	8	
NONE	OFF	OFF	2400bps	OFF	OFF	OFF	WTX (WONWOO)	OFF	OFF	OFF
EVEN	ON	OFF	4800bps	OFF	OFF	ON	WPD (PELCO-D)	OFF	OFF	ON
OLD	OFF	ON	9600bps	OFF	ON	OFF	WPP (PELCO-P)	OFF	ON	OFF
NONE	ON	ON	19200bps	OFF	ON	ON				
			38400bps	ON	OFF	OFF				
			57600bps	ON	OFF	ON				

#### SW503~SW505 (PTZ address select)



SW503 : 100 digit of camera address  
 SW504 : 10 digit of camera address  
 SW505 : 1 digit of camera address

ex) If SW503=1, SW504=2, SW505=5  
 then, the Camera Address = 125

\* Factory default address is 001

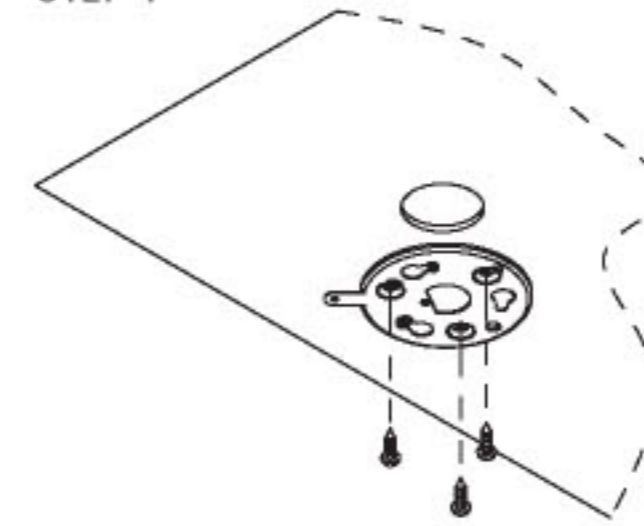
## PTZ SETTING & INSTALLATION

### 2. Installation & Cable connection

#### Precautions for Installation

- Ensure that the installation location can safely bear min. 4Kg and its installation fittings.
- When installing the ceiling bracket, use the supplied fixing screws or similar screw head.
- Do not drop the product during installation. Do not allow anyone to stand below the installation area.

#### STEP 1



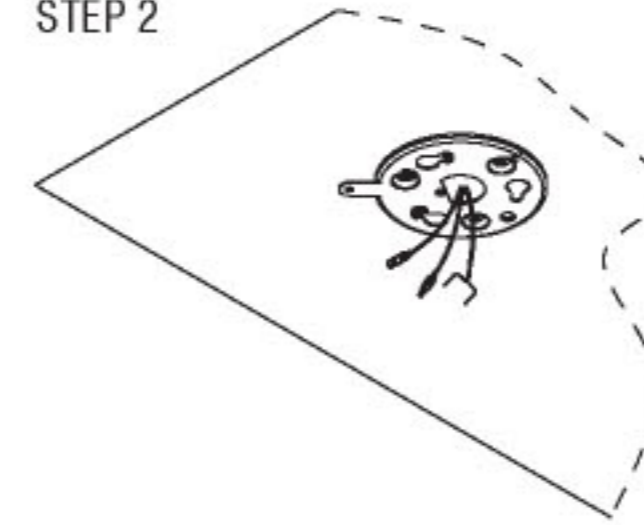
STEP 1. Prepare the installation accessories provided in the camera box. The Video and RS-485 control cables, Power adaptor(DC12V, 2A) and installation tools are necessary to complete the installation.

For cable connection, make a hole (Hole size 25mm~30mm) in the ceiling where you want to install the camera.

Attach the installation bracket with the included 3 fixing screws.

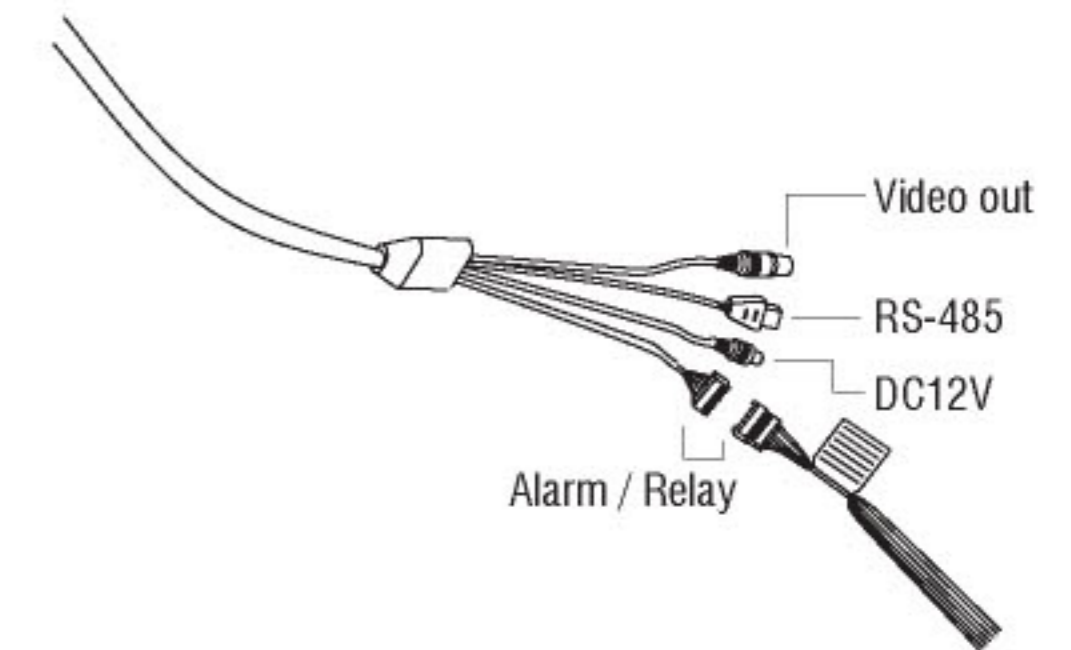
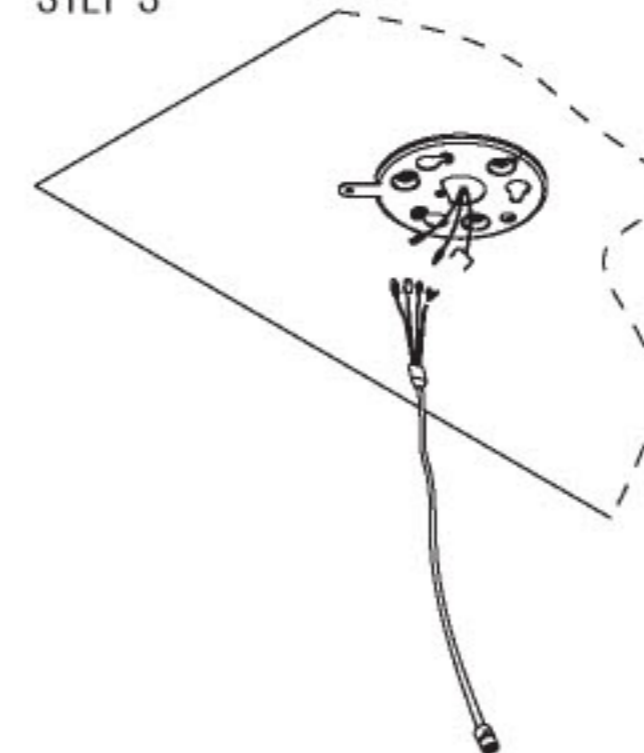
STEP 2. The external cables (video cable, controller cable and power) should be inserted into the center hole of the bracket.

#### STEP 2



STEP 3. Connect the external cables to included installation cables (Video, DC12V power, RS-485 communication, Alarm-in, and Relay-out) For more detail connection, please see below connector description and chart.

#### STEP 3

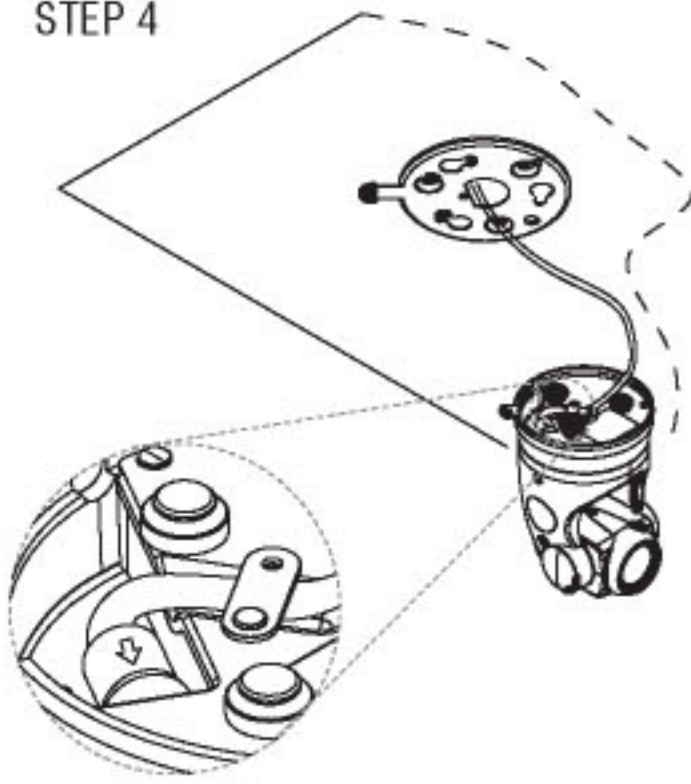


#### Alarm and Relay

Black	relay 2 (NO)
Brown	relay 2 (COM)
Red	relay 1 (NO)
Orange	relay 1 (COM)
Yellow	Alarm 2 (NO)
Green	Alarm 1 (NO)
Blue	Alarm (COM)

## PTZ SETTING & INSTALLATION

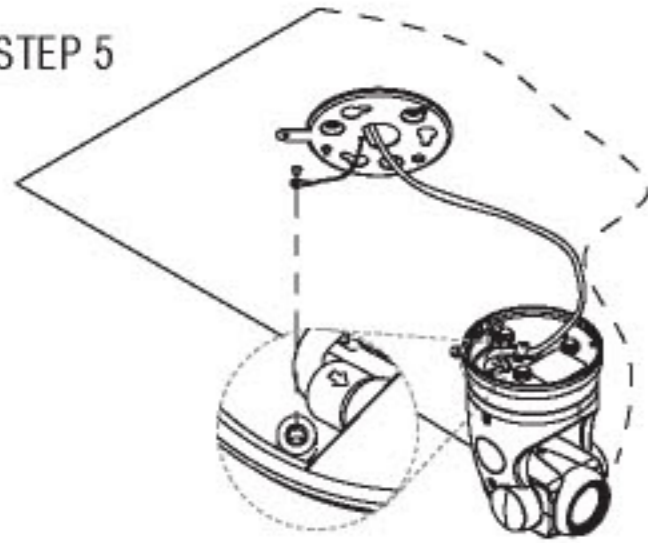
STEP 4



STEP 4. Connect the camera with the provided Installation cable. The arrow mark on the cable connector should be facing upwards (see diagram). After cable connection, close the cable latch.

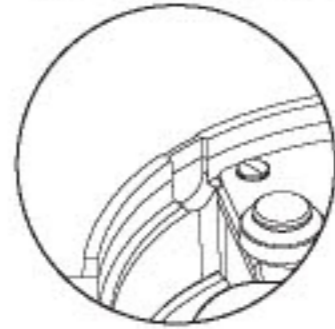
(CAUTION) For safety reasons, the power should be off during the installation. There is NO power button on the camera.

STEP 5

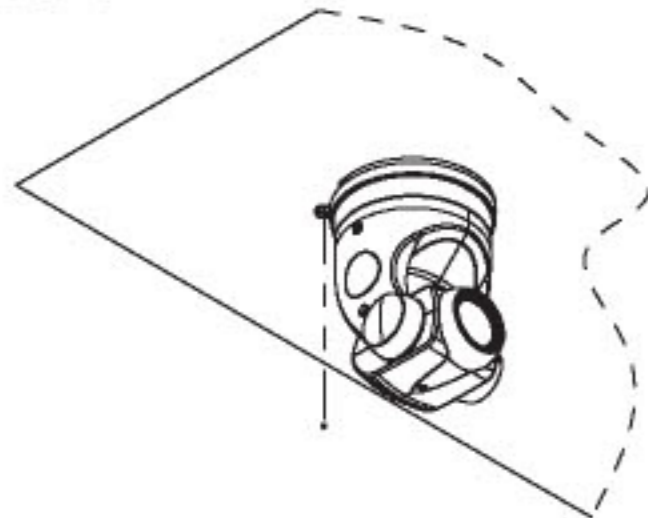


STEP 5. Connect the metal safety wire from the bracket to the camera with the included screw.

(NOTICE) To make cabling without ceiling hole(Side cabling), please cut off the cabling guide of PTZ. (see picture)



STEP 6

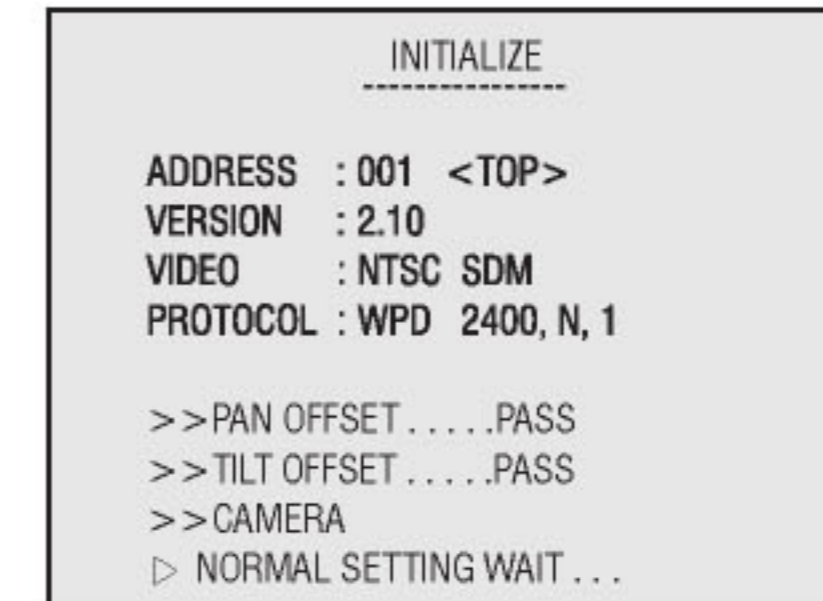


STEP 6. Pull the cable into the ceiling hole and attach the camera to the bracket by turning clockwise. After mounting the camera to the bracket, fix the camera with the supplied fixing screw.

## On Screen Display Menu

### INITIALIZE

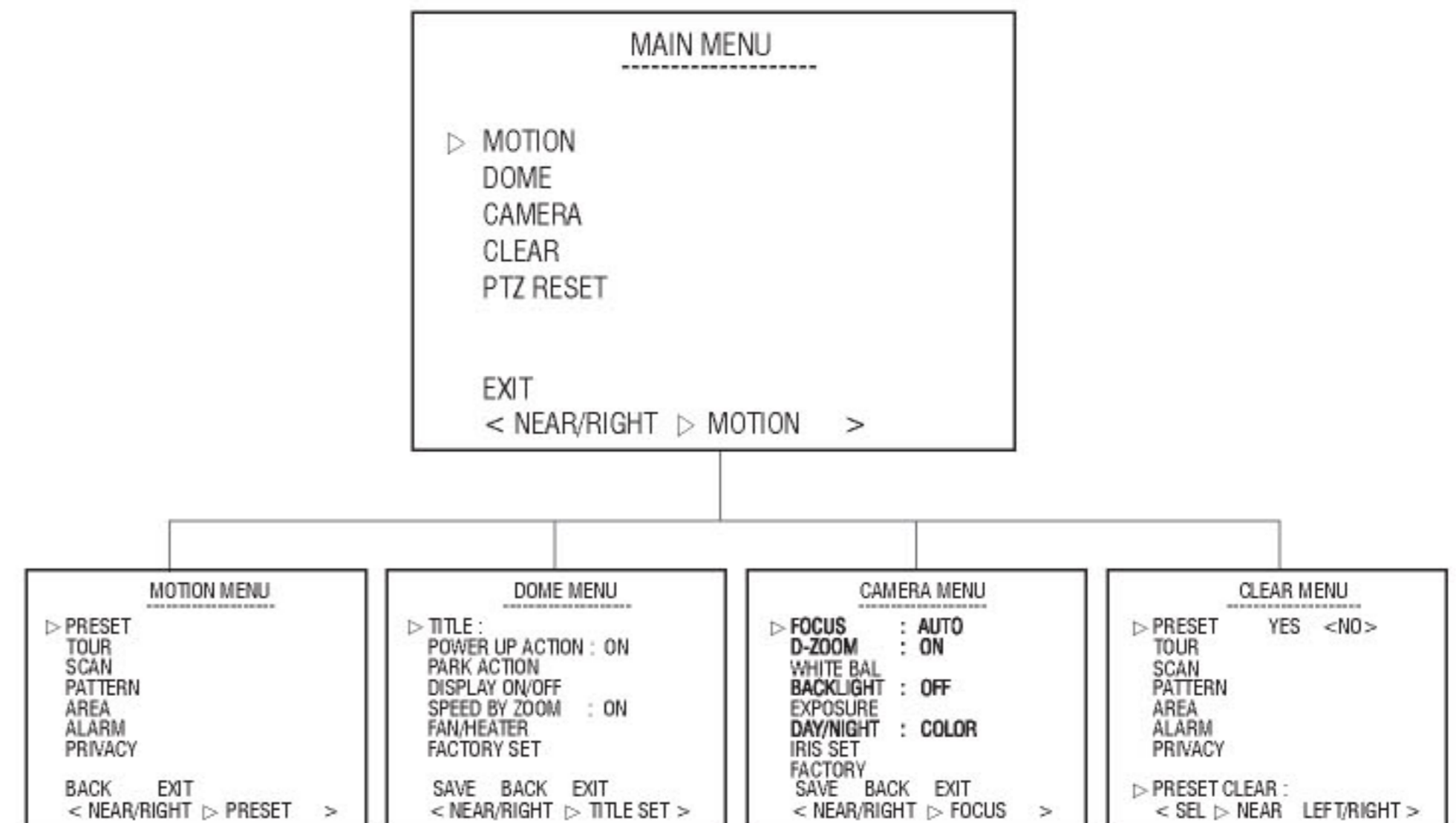
When you turn on the power, the INITIALIZE screen on the monitor will appear. During Initialization, you can check the information. If the information is different with your desired setting, turn off the camera and check the DIP switches again. After Initialization, the camera image will appear automatically.



### MAIN MENU

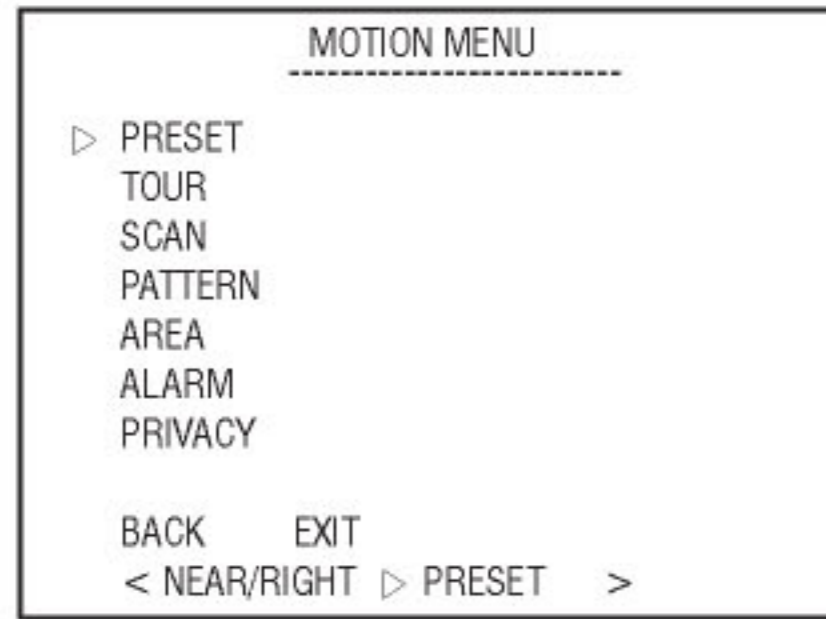
To access the Main Menu, press the No.1 and MENU button for 3 seconds (WTX keyboard) or enter "95" and press the PRESET button (Pelco mode).

In the main menu, move the joystick up and down to navigate through the menu items and press the Focus/NEAR key or move the joystick right to select menu item. For each step of the menu, there is menu control GUIDE on the bottom.



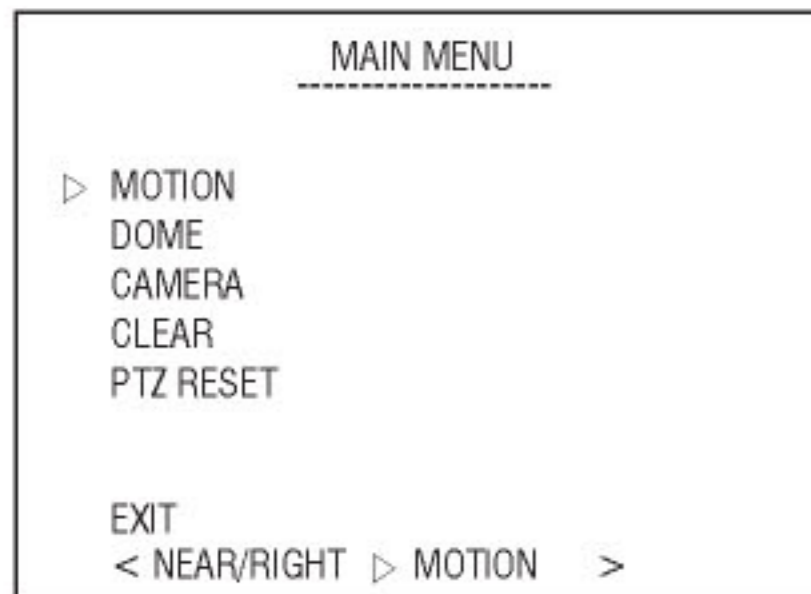
## On Screen Display Menu

### (1) MOTION MENU



#### ① PRESET

The Preset function enables the camera to memorize positions of the pan/tilt and zoom. To recall the Preset positions, select the No. and press the Preset button.



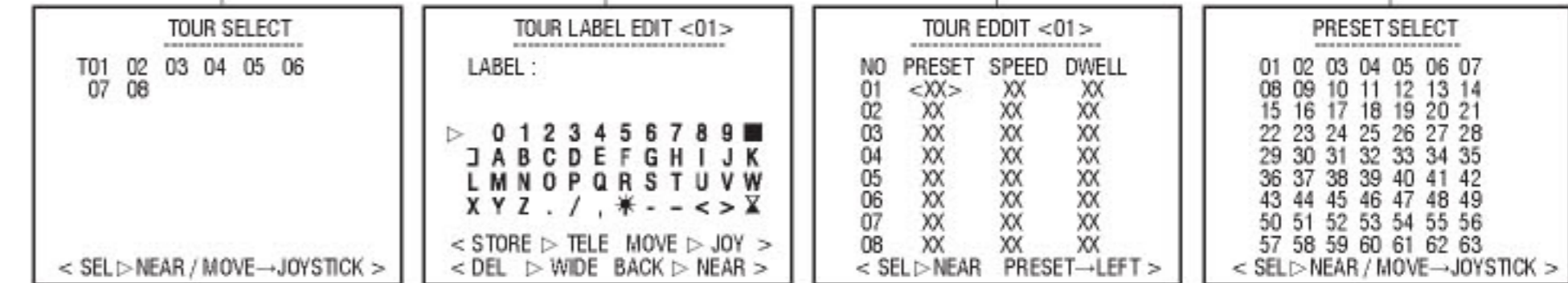
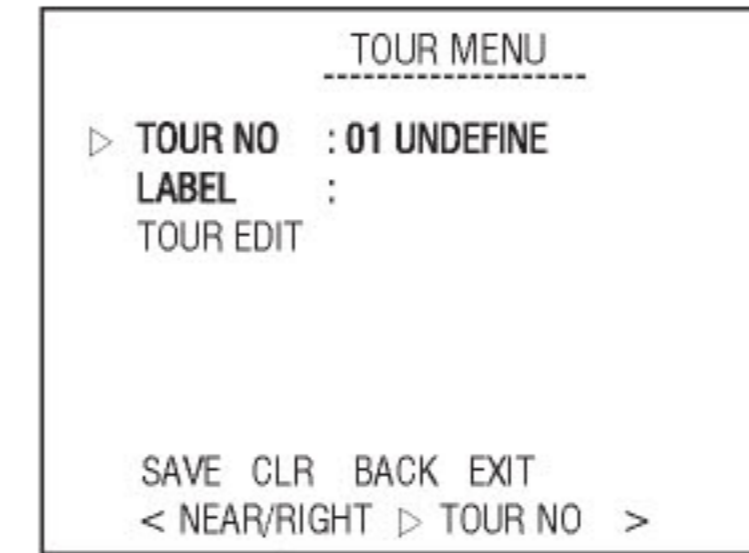
- It support up to 63 preset positions
- Preset Label will be displayed when the camera moves to the Preset position
- Focus mode can be programmable for each Preset position
- Quick program : To set a Preset location, set the camera, enter a number and press/hold the Preset button for 3 seconds.



## On Screen Display Menu

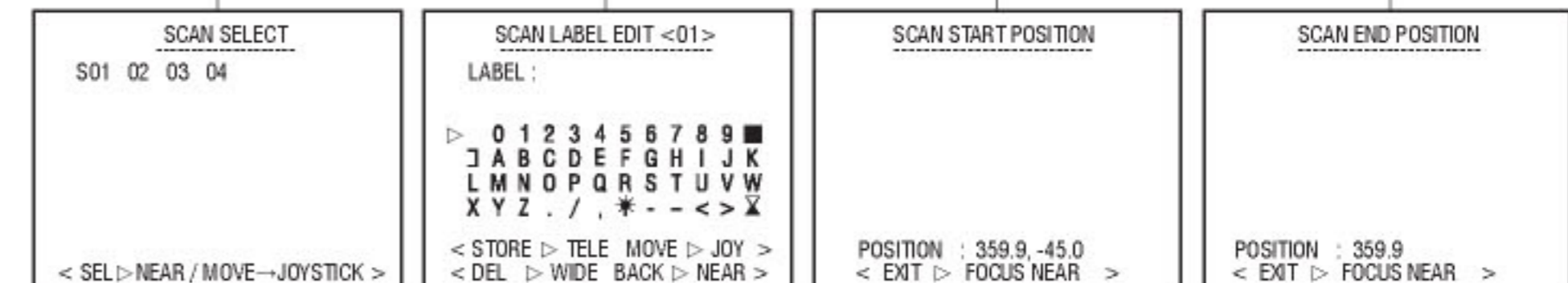
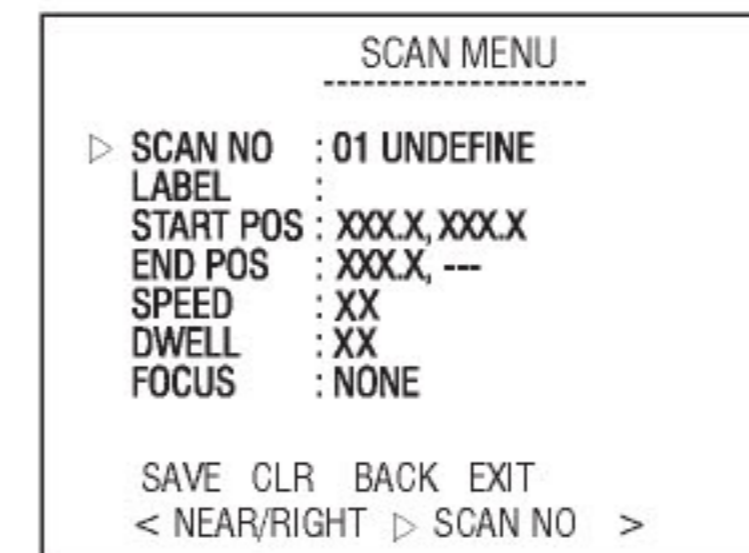
### ② TOUR

The Tour function consists of several presets which run in sequence. Also, the moving speed(1~63 step) and dwell time (1~99sec) is adjustable. There are 1 to 8 programmable Tour functions.



### ③ SCAN

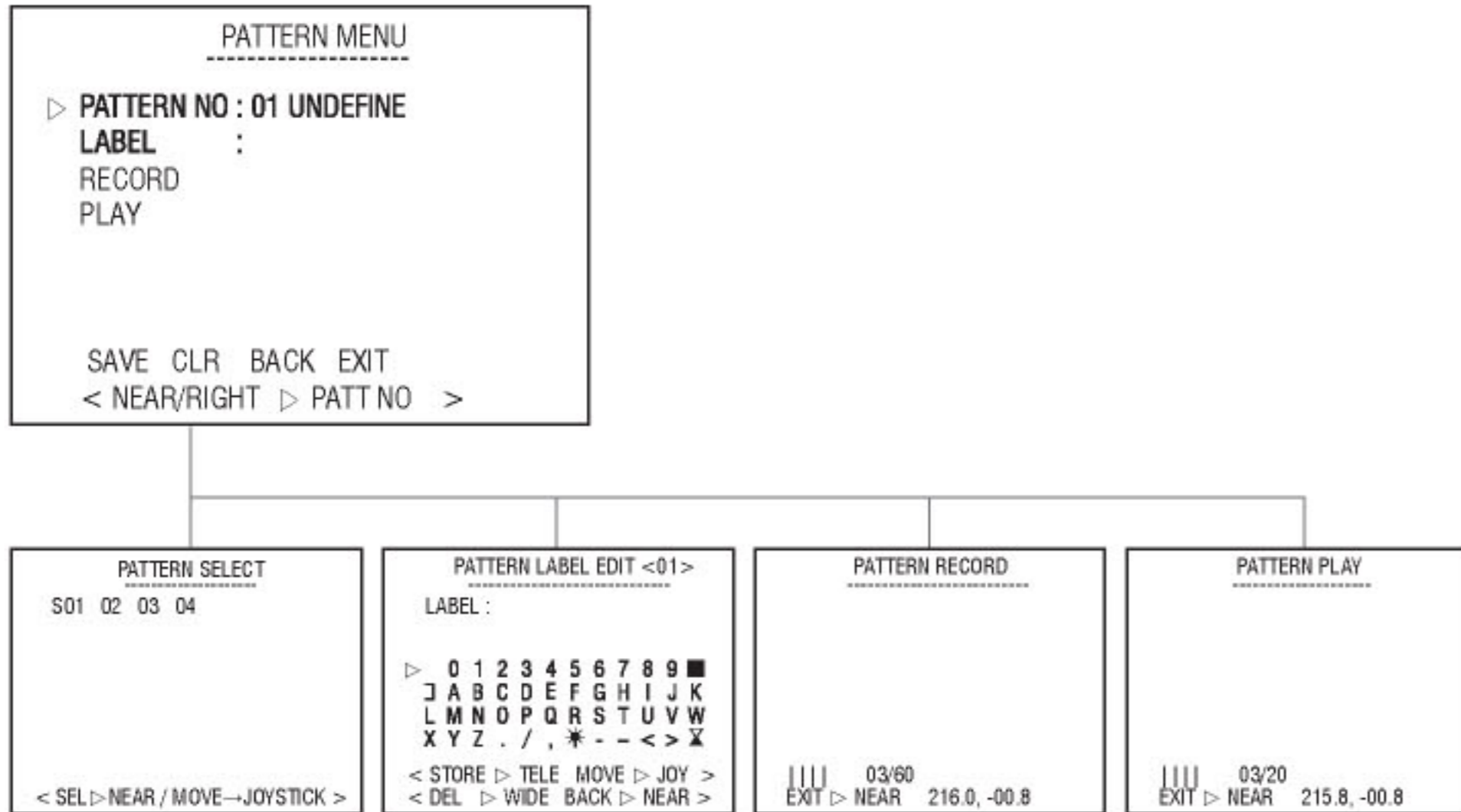
The Scan function keeps panning between two programmed pan positions. Also the moving speed(1~64 step) is adjustable. There are 4 programmable Scan functions.



## On Screen Display Menu

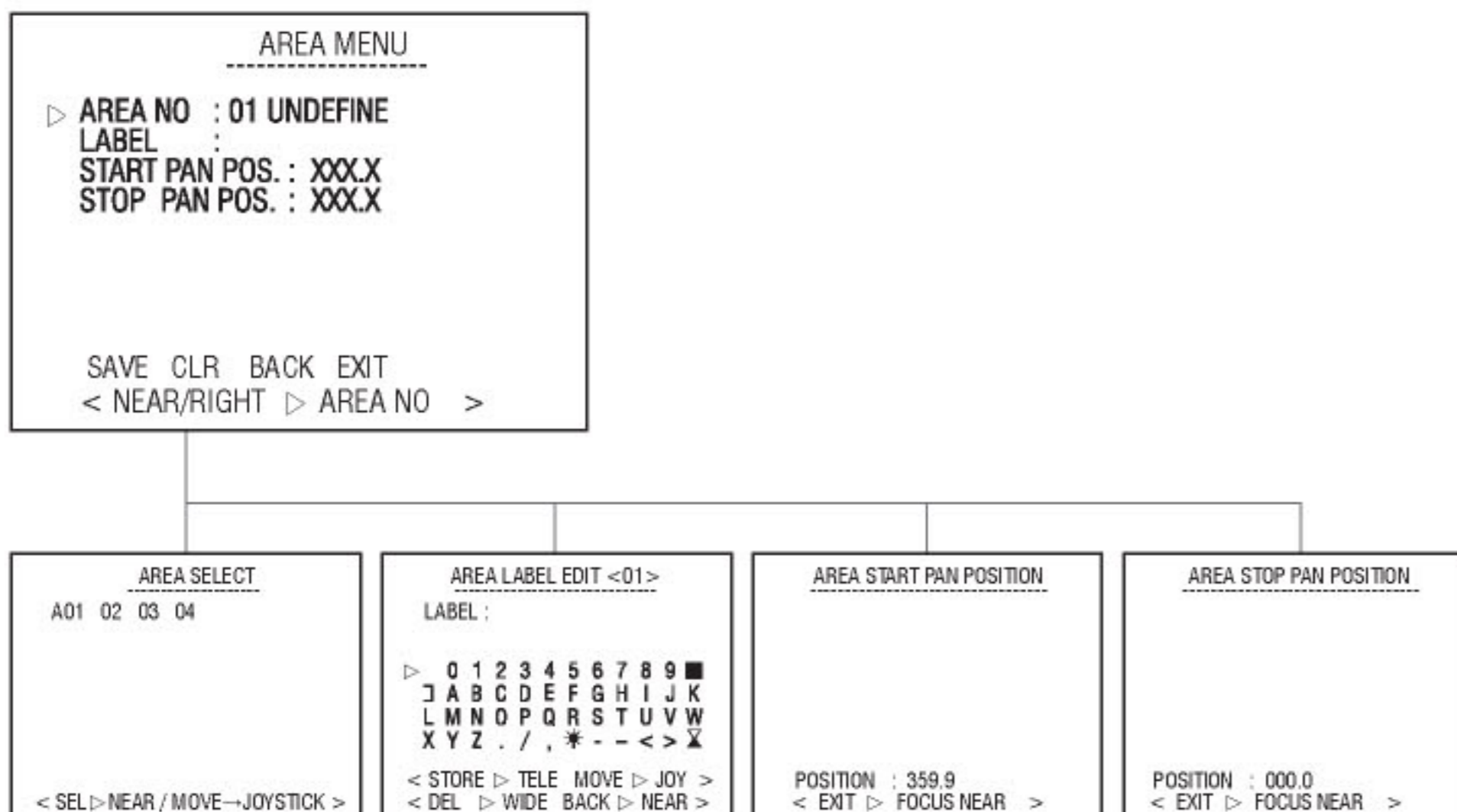
### ④ PATTERN

The Pattern function memorizes the user's random moving path and zoom ratio. There are four programmable Pattern functions. And the recording time limit is 60 seconds for each.



### ⑤ AREA

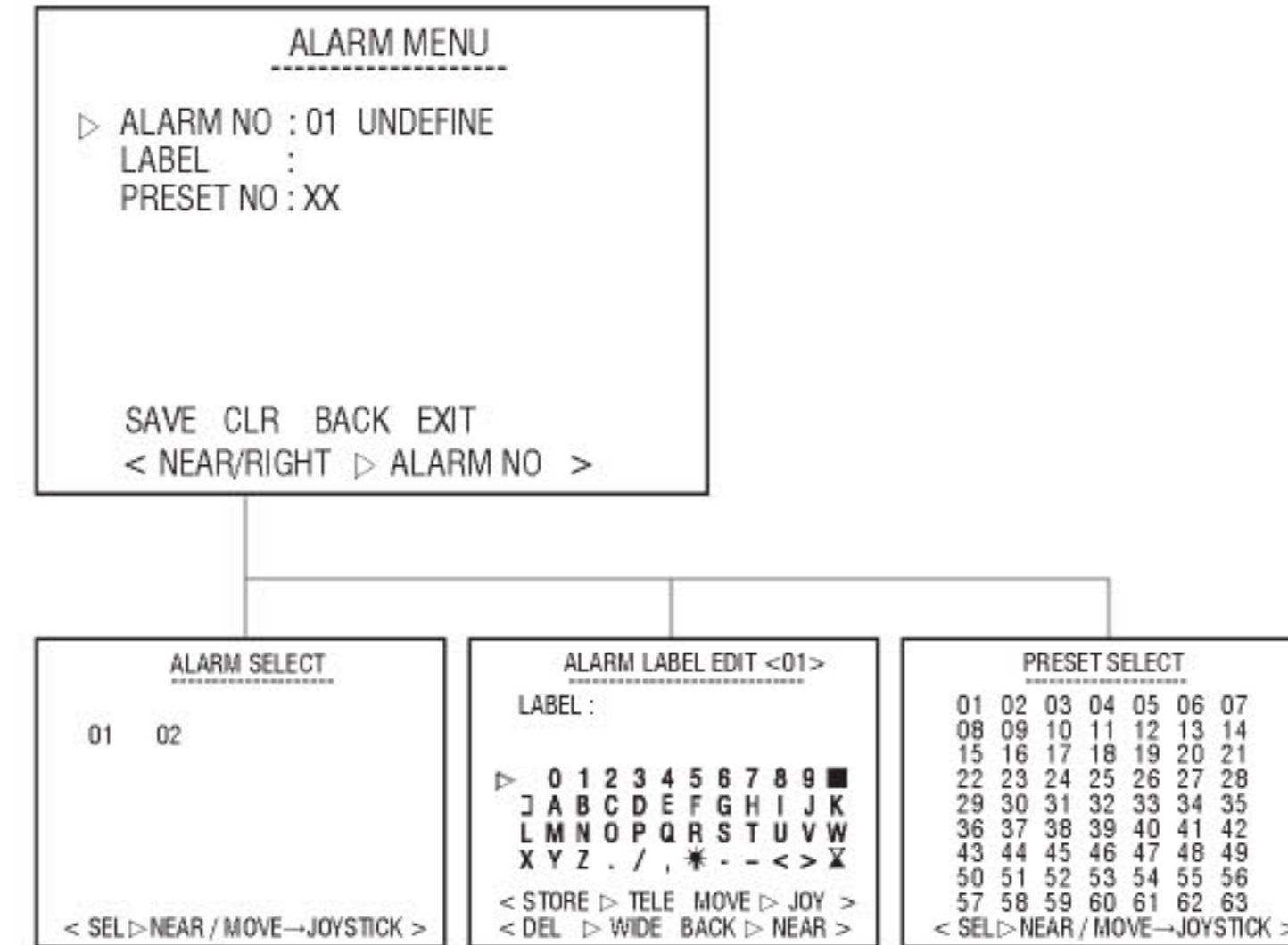
The Area function is that display the Area name between two programmed pan positions. There are 4 programmable Area display functions.



## On Screen Display Menu

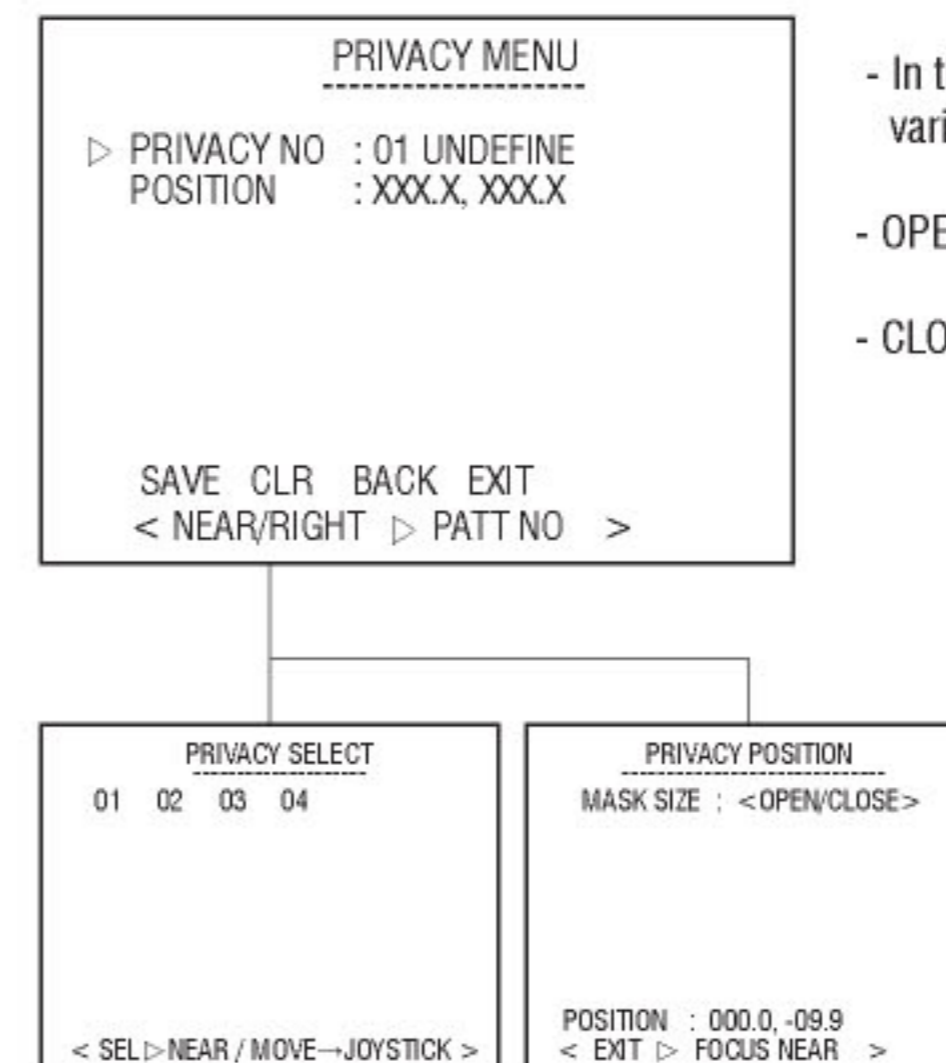
### ⑥ ALARM

The Alarm function enables the camera to move to the programmed Preset position when the alarm is triggered. This camera supports 2 Normal Open Alarm functions.



### ⑦ PRIVACY

The Privacy function allows areas of the output to be hidden when programmed. There are 4 programmable Privacy zone masking area functions.



- In the Privacy Position setup, the masking size can be variable with the iris OPEN/CLOSE key
- OPEN : make the mask larger
- CLOSE : make the mask smaller



## :: On Screen Display Menu

### (2) DOME MENU



#### ① TITLE

You can set the camera title and it will display when the camera is ON.

#### ② POWER UP ACTION

The camera memorizes the latest action and restores it when there is sudden power failure.

#### ③ PARK ACTION

The camera moves back to the programmed function after a set time.

#### ④ DISPLAY ON/OFF

You can set the OSD display ON or OFF.

#### ⑤ SPEED BY ZOOM

When this function is ON, the pan/tilt speed is inversely adjusted to the zoom ratio.

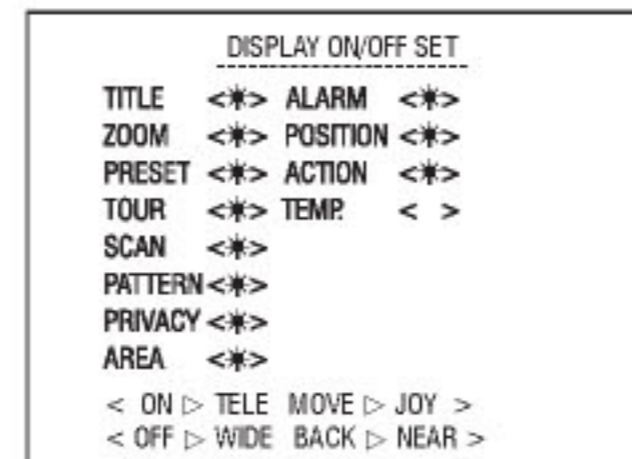
#### ⑥ FAN/HEATER

You can set the working temperature of inside FAN and HEATER. (CAUTION) It is closely related with the camera performance and life cycle. If you don't have special purpose, please leave this as factory default.

#### ⑦ FACTORY SET

Restores all program values to the factory default.

\* Motion function is not removed. It can be removed only in the CLEAR menu.



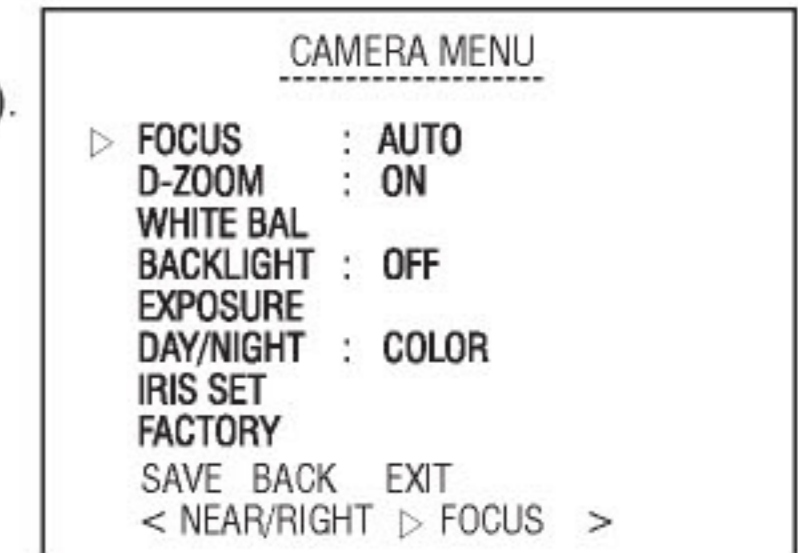
## :: On Screen Display Menu

### (3) CAMERA MENU

#### ① FOCUS

You can set up the focus mode (Auto, Manual or One-shot).

- Auto : The camera adjusts the focus automatically while monitoring the screen continuously in the auto mode. During auto focus mode, the zoom key operation is not recognized as the input of the focus key.
- Manual : In the manual mode, users can adjust the camera focus manually.
- One-shot : Only when the camera does not move, it turns into the auto mode. It is the same as the manual mode.



#### Auto focus may not function normally under the following conditions.

- When the light level in the surveillance area is low
- When the slow-shutter works
- When the amplification is increased
- When the light level in the surveillance area is excessively high
- When the objects in the long and short distance are under the same surveillance area
- When there is no contrast (white and black) in the object (e.g. sky or wall)
- When the thin horizontal line is captured

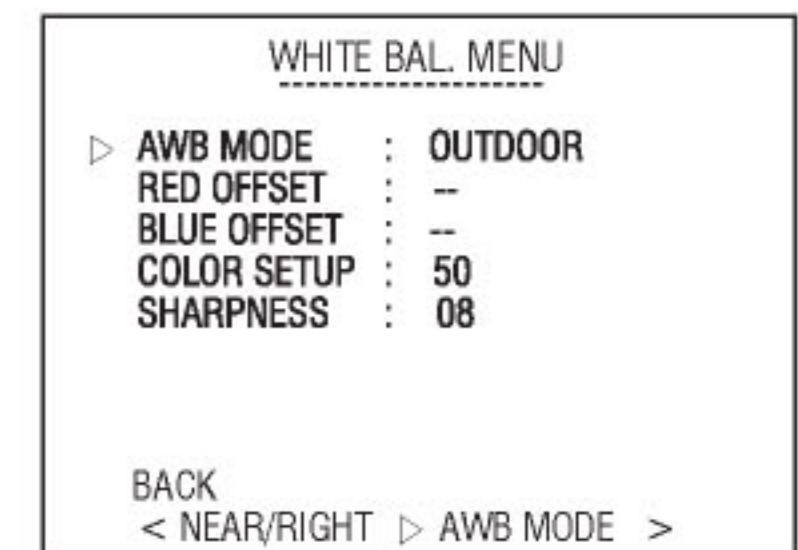
(NOTICE) If camera faces toward a certain source of light for more than 5days, it might be caused the camera focus blurred. The camera automatically refreshes the lens every 48 hours to maintain the best condition of camera focus lens. It takes less than 10 seconds and the message "LENS REFRESH" will be displayed on the monitor

#### ② DIGITAL ZOOM

You can set the Digital Zoom function ON/OFF. As the digital zoom magnification increases, the image quality is lowered.

#### ③ WHITE BALANCE

The White Balance function corrects the abnormal white color into the normal white color under any color temperature lighting. Select the mode among OUTDOOR, INDOOR, AWC and Manual. OUTDOOR is selected by default.



## ⚡ On Screen Display Menu

\*\* Balances the color automatically depending on the source of light from 1,800~10,500K color temperature.

**Indoor:** Use this mode in the area under the limited color temperature.

**Outdoor:** Use this mode in the area under the broad color temperature.

**Manual:** Fine tuning is possible through this manual control mode.

Select the color temperature and increase or decrease the Red or Blue values to shift the color of the object.

\* Red : Red Gain can be changed.

\* Blue : Blue Gain can be changed.

### White Balance may not function properly under the following conditions.

- When the color temperature surrounding the object is very high. (e.g. clear sky or sunset)
- When it is dark around the object.
- When the camera is pointing towards a fluorescent lamp directly or when lighting conditions change a lot.

### ④ BACKLIGHT (BACK LIGHT COMPENSATION)

You can set the back light compensation level

HIGH : Gain increased from 6dB up to 34dB.

MIDDLE : Gain increased from 6dB up to 30dB.

LOW : Gain increased from 6dB up to 18dB

OFF : BLC function is not working.

### ⑤ EXPOSURE

You can set the camera exposure

a) Brightness : The brightness of the screen can be adjusted.

b) Shutter mode

A.FLK : Use this mode when the screen flickers because of inconsistent frequency with the surrounding lights.

Manual : Shutter speed can be controlled manually from 1/60 second to 1/120,000 second.

c) AGC : When the brightness of the image taken under dark light is under a certain level, the AGC (Automatic Gain Control) functions to define whether to control the Gain automatically or not.

- HIGH : Gain increased from 6dB up to 34dB.
- NORMAL : Gain increased from 6dB up to 30dB
- OFF : Gain is fixed at 6dB.

d) SSNR: It reduces the background noise under low light conditions. There can be afterimage depending on the DNR level.

e) SENS UP: In the low light condition, camera accumulate the light and make image brighter. There can be afterimage from the moving object and AF working incorrectly.

EXPOSURE MENU	
▷ BRIGHTNESS	: 25
SHUTTER MODE	: ESC
SHUTTER SPD	: ---
AGC	: NORMAL
SSNR	: LOW
SENS UP	: OFF
SENS LIMIT	: X4
BACK	
< NEAR/RIGHT ▷ BRIGHTNESS >	

## ⚡ On Screen Display Menu

### ⑥ DAY&NIGHT

The darkness level is detected automatically under low light conditions such as at night or under dark light to keep the screen bright and clear.

**COLOR** : Output images are displayed in color all the time. Burst signal size can be adjusted. Infrared LED OFF.

**B/W** : Output images are displayed in black and white all the time. Burst signal can be kept or removed. Infrared LED ON.

**AUTO** : Under day condition, the mode is automatically changed into the COLOR mode to keep an optimum color. At night, the mode is automatically changed into the B/W mode to distinguish dark images clearly. (Day : Infrared LED OFF / Night : Infrared LED ON)

(AUTO 1 : 2.0 lux / AUTO 2 : 4.0lux)

### ⑦ IRIS SET

You can set the Iris mode.

**Auto** : The brightness of the image signal can be adjusted automatically depending on the amount of light.

**Manual** : The brightness of the image can be adjusted.

### ⑧ FACTORY DEFAULT (CAMERA)

Restore camera program value to the factory default.

IRIS MODE	
▷ IRIS MODE	: AUTO
IRIS VALUE	: --
BACK	
< NEAR/RIGHT ▷ IRIS MODE >	

### (4) CLEAR MENU

Remove each of programmed MOTION function.

CLEAR MENU	
▷ PRESET	YES <NO>
TOUR	
SCAN	
PATTERN	
AREA	
ALARM	
PRIVACY	
▷ PRESET CLEAR :	
< SEL ▷ NEAR LEFT/RIGHT >	

### (5) PTZ RESET

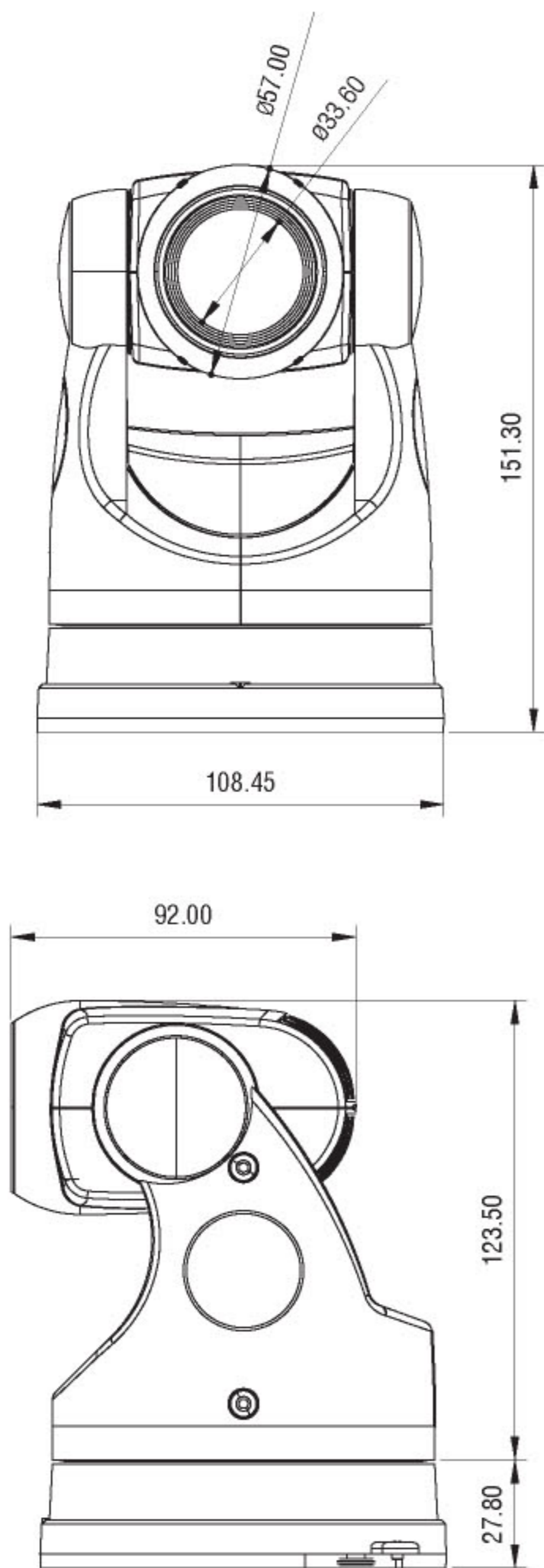
Used to initialize the camera.

Does not erase any programmed data.

MAIN MENU	
MOTION	
DOME	
CAMERA	
CLEAR	
▷ PTZ RESET	YES <NO>
EXIT	
< SEL ▷ NEAR LEFT/RIGHT >	

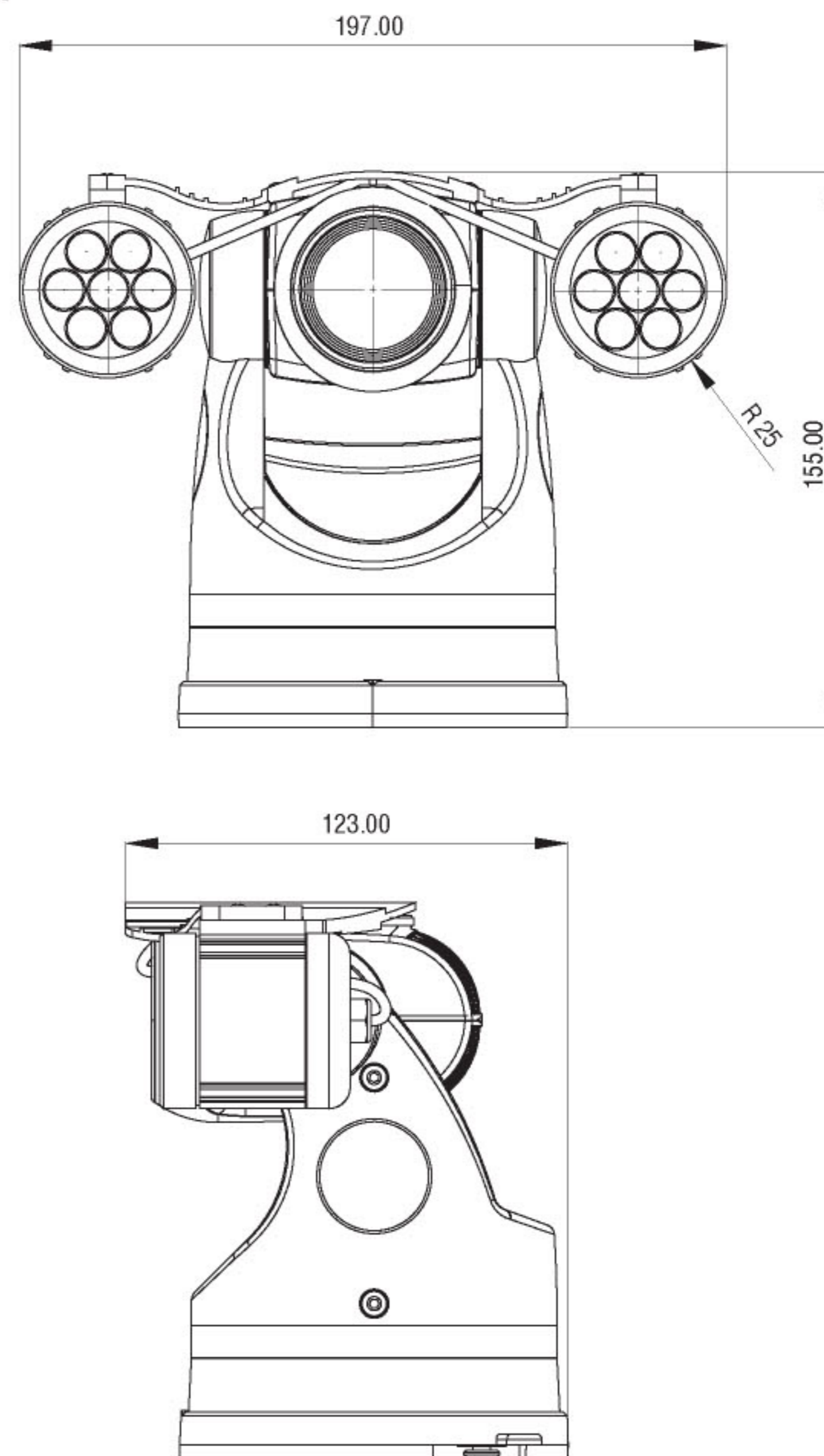
== DIMENSIONS (mm)

WCM-101



== DIMENSIONS (mm)

WCM-101R



## :: SPECIFICATIONS

Mode	WCM-101N	WCM-101P
Image Pick-up Device	1/4" inch Interline CCD	
Total Pixels	811(H) x 508(V)	795(H) x 596(V)
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Scanning System	2 : 1 Interlace, 525 Lines / 60 Fields / 30 Frames	2 : 1 Interlace, 625 Lines / 50 Fields / 25 Frames
Synchronization	Internal	
Scanning Frequency	Horizontal : 15.734KHz / Vertical : 59.94Hz	Horizontal : 15.625KHz / Vertical : 50Hz
Horizontal Resolution	Color(wide) : 520TV lines (Min.) / B/W(wide) : 570TV lines (Min.)	
Video Output	CVBS : 1.0Vp-p / 75Ω	
Zoom Ratio	10X, f3.8 ~ 38.0mm (F2.8)	
Min. Focus Distance	1.0m	
Angle Field of View	Horizontal : Appr. 51.2°(Wide) to 5.58°(Tele) / Vertical : Appr. 39.3°(Wide) to 4.27°(Tele)	
Digital Zoom	Built-in (2X ~ 10X, Total 100X zoom)	
S / N Ratio (Y signal)	50dB (AGC off, Weight on)	
Min. Illumination	0.7Lux@F2.8 (50 IRE) : Color mode 0.02Lux@F2.8 (50 IRE) : B/W mode	
Back Light Compensation	Low / Middle / High / Off selectable	
Day & Night	Color / Auto1 / Auto2 / B/W (ICR filter change)	
Gain Control	Normal / High / Off selectable	
White Balance	ATW / AWC / Manual selectable (1800°K ~ 10,500°K)	
Electronic Shutter Speed	Auto / Manual selectable (1/60 ~ 1/120,000)	Auto / Manual selectable (1/50 ~ 1/120,000)
DSS	On / Off (Selectable limit ~ 128X)	
DNR	Low / Middle / High / Off selectable	
Function	63 Presets, 8 Tours, 4 Scan, 4 Area, 4 Pattern, 2 Alarm, Autoscan	
Privacy Function	Max. 4 Programmable zones	
Preset Positions	63 Positions	
Rotation Angle	Pan : 360° Endless / Tilt : -45° ~ 190° (Digital flip)	
Rotation Speed	Pan : 110°/sec (Preset: 110°/sec) / Tilt : 35°/sec (Preset: 50°/sec)	
Flip	Left / Right, Up / Down selectable	
Lens Initialization	Built-in	
Focus Control	Auto / Manual / One push selectable	
Iris Control	Auto / Manual selectable	
Protocols	PELCO-D, P, WONWOO(DRX)	
Communication	RS-485	
Power Consumption	DC12V (±10%), 1.5A	
Operating Temperature	-10°C ~ +45°C (No chilly wind)	
Operating Humidity	20% ~ 75% RH	
Certification	CE, FCC, RoHS	
Dimensions	Ø109(W) x 151(H)mm	
Weight	1.2Kg	

## :: SPECIFICATIONS

Mode	WCM-101NR	WCM-101PR
Image Pick-up Device	1/4" inch Interline CCD	
Total Pixels	811(H) x 508(V)	795(H) x 596(V)
Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Scanning System	2 : 1 Interlace, 525 Lines / 60 Fields / 30 Frames	2 : 1 Interlace, 625 Lines / 50 Fields / 25 Frames
Synchronization	Internal	
Scanning Frequency	Horizontal : 15.734KHz / Vertical : 59.94Hz	Horizontal : 15.625KHz / Vertical : 50Hz
Horizontal Resolution	Color(wide) : 520TV lines (Min.) / B/W(wide) : 570TV lines (Min.)	
Video Output	CVBS : 1.0Vp-p / 75Ω	
Zoom Ratio	10X, f3.8 ~ 38.0mm (F2.8)	
Min. Focus Distance	1.0m	
Angle Field of View	Horizontal : Appr. 51.2°(Wide) to 5.58°(Tele) / Vertical : Appr. 39.3°(Wide) to 4.27°(Tele)	
Digital Zoom	Built-in (2X ~ 10X, Total 100X zoom)	
S / N Ratio (Y signal)	50dB (AGC off, Weight on)	
Min. Illumination	0.7Lux@F2.8 (50 IRE) : Color mode 0.02Lux@F2.8 (50 IRE) : B/W mode	
Back Light Compensation	Low / Middle / High / Off selectable	
Day & Night	Color / Auto1 / Auto2 / B/W (ICR filter change)	
Gain Control	Normal / High / Off selectable	
White Balance	ATW / AWC / Manual selectable (1800°K ~ 10,500°K)	
Electronic Shutter Speed	Auto / Manual selectable (1/60 ~ 1/120,000)	Auto / Manual selectable (1/50 ~ 1/120,000)
DSS	On / Off (Selectable limit ~ 128X)	
DNR	Low / Middle / High / Off selectable	
Function	63 Presets, 8 Tours, 4 Scan, 4 Area, 4 Pattern, 2 Alarm, Autoscan	
Privacy Function	Max. 4 Programmable zones	
Preset Positions	63 Positions	
Rotation Angle	Pan : 360° Endless / Tilt : -45° ~ 90°	
Rotation Speed	Pan : 110°/sec (Preset: 110°/sec) / Tilt : 35°/sec (Preset: 50°/sec)	
Flip	Left / Right, Up / Down selectable	
Lens Initialization	Built-in	
Focus Control	Auto / Manual / One push selectable	
Iris Control	Auto / Manual selectable	
Protocols	PELCO-D, P, WONWOO(DRX)	
Communication	RS-485	
Visible Distance	Indoor 30M	
Infrared LED	10Ø IR LED 13PCS	
Power Consumption	DC12V (±10%), 2A	
Operating Temperature	-10°C ~ +45°C (No chilly wind)	
Operating Humidity	20% ~ 75% RH	
Certification	CE, FCC, RoHS	
Dimensions	197(H) x 155(V) x 123(W) mm	
Weight	1.6Kg	

## :: QUICK COMMAND

FUNCTION	PROTOCOL		
	'D'	'P'	WONWOO
GOTO PRESET	1~63 PRESET	1~63 PRESET	1~63 PRESET
SET PRESET	1~63 SET PRESET	1~63 SET PRESET	1~63 SET PRESET
GOTO TOUR	71~78 PRESET	71~78 PRESET	71~78 PRESET
SET TOUR	71~78 SET PRESET	71~78 SET PRESET	71~78 SET PRESET
GOTO SCAN	81~84 PRESET	81~84 PRESET	81~84 PRESET
SET SCAN	81~84 SET PRESET	81~84 SET PRESET	81~84 SET PRESET
GOTO PATTERN	91~94 PRESET	91~94 PRESET	91~94 PRESET
SET PATTERN	91~94 SET PRESET	91~94 SET PRESET	91~94 SET PRESET
FLIP	90 PRESET	90 PRESET	90 PRESET
AUTO SCAN	99 PRESET	99 PRESET	99 PRESET
START MENU	95 SET PRESET	95 SET PRESET	95 SET PRESET

## :: Memo