

USER MANUAL

Full HD Mega-pixel Rugged PTZ Camera



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

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1. INFORMATION FOR USER

1.1 WARNING

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
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.

1.2 EXPLANATION OF GRAPHICAL SYMBOLS



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.

1.3 FCC COMPLIANCE STATEMENT

FCC 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.

1.4 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.

CAUTION - Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

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

* This manual is subject to change without notice for product improvement.

2. PRECAUTIONS

- **Do not install the camera in extreme temperature conditions.**

Do use the camera under conditions where temperatures are within -20°C to 60°C (in continuous operation). 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.

- **To prevent electric shock and risk of fire hazards.**

- **Do not use power sources other than that specified.**

- **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.

3. FEATURES

Outdoor Heavy-duty PTZ Camera

Heavy-duty aluminum die-cast body allows WTK Series is ideal for traffic control, harbor and airport surveillance, oil fields & refineries, the military & police, sport stadiums, town & city centers, bus & rail stations and other high security outdoor installations.

Unobstructed 360° rotation and 180° flip

Heavy-duty long life slip ring allows for 360° endless panning and unobstructed 180° flip.

Light Function

It's built-in 30 pcs Super IR LED (Infra-red or white).

Built-in Fan & Heater

Built-in Wiper System

T rue Day & Night (ICR Filter Change)

The IR cut filter is when the camera is operating as a color camera for precise color reproduction. With ICR, the filter is removed which allows for much greater light sensitivity in monochrome mode.

Break and clutch protected pan and tilt

OSD (On Screen Display)

The camera IDs, camera preset numbers, preset names, area names, and camera operation status are displayed on the monitor, allowing set up of various camera functions through the OSD menu screen.

Auto-focus 20X, 30X Optical Zoom

The built-in 20X, 30X optical zoom lens with auto-focus is combined with a 32X digital zoom, providing a maximum of 640X, 960X zoom.

Wide Range Auto functions

Preset : Up to 255 programmable presets.

Tour : Up to 8 programmable Tours consisting of presets with individual dwell time.

Scan : Repeatedly pan & tilt operating between two positions. (Max.8)

Pattern : Up to 4 programmable Patterns memorizing the PTZ movement.

Area : Up to 16 programmable Area display sets.

Alarm : Move the camera to programmed Preset position with Alarm trigger. (Max.1)

Privacy : Up to 8 programmable Privacy masking.

Home Position : Home Position specify the main image display area.

WDR (Wide dynamic range)

The Camera delivers clear, high quality pictures even in backlight, by increasing exposure in dark areas while decreasing it in bright areas a corrected image with clear details results.

Variable speed Pan/Tilt control

In manual mode, sophisticated operating is possible at zoom in state by speed correcting function.

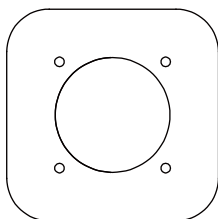
Eco-friendly Green Energy product

Minimize power consumption and save the earth by utilizing the WTK Series all-in-one camera system.

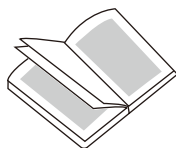
4. SETTING & INSTALLATION

4.1 Unpacking

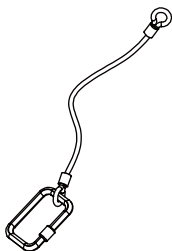
Guiding sticker for installation



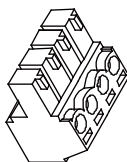
Manual



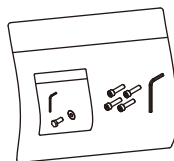
Detaching Hook



4PIN Communication Terminal

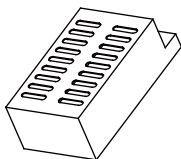


Accessories

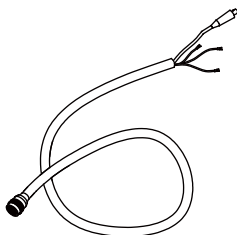


L-WRENCH(2.5mm/6mm),
M8 HEX SCREW, M8 WASHER,
M8 WRENCH SCREW

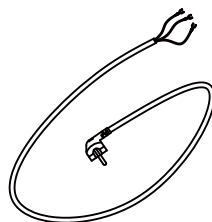
Switched-Mode Power Supply



MAIN CABLE

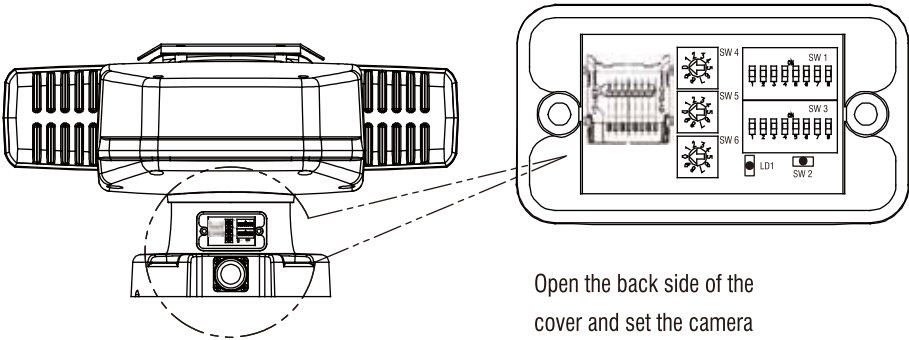


POWER CABLE



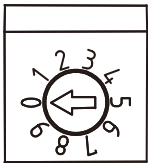
4.2 DIP Switch Setting

Before starting up the camera, set the protocol, camera address and details with dip-switches referring to the following.

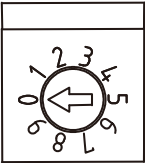


Open the back side of the cover and set the camera

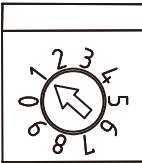
Camera ID (ADDRESS)



S/W 4



S/W 5



S/W 6

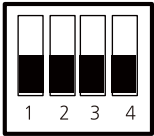
S/W 4 : 100 digit of ID
S/W 5 : 10 digit of ID
S/W 6 : 1 digit of ID

Ex) S/W 4=0, S/W 5=0, S/W 6=1

Address=001

Each camera must have a unique address(ID). Identical ID's on the same line may damage the control circuit caused by an electric short.

SW 3



PROTOCOL

1	2	3	4	PROTOCOL
0	0	0	0	EZ
0	0	0	1	PELCO D
0	0	1	0	PELCO P
0	0	1	1	WTX
0	1	0	0	SJ1000
0	1	0	1	NC
0	1	1	0	NC
0	1	1	1	NC
1	0	0	0	NC

SW 3



BAUDRATE

5	6	7	BAUDRATE
0	0	0	2400
0	0	1	4800
0	1	0	9600
0	1	1	19200
1	0	0	38400
1	0	1	57600
1	1	0	NC
1	1	1	NC

SW 3 NTSC/PAL



8	VIDEO OUT
0	NTSC
1	PAL

SW 1 IP SELECT



6	IP SELECT
0	IP OFF
1	IP ON

SW 1 RS485 LOOP (TERMINATION)



7	RS LOOP
0	OFF
1	ON

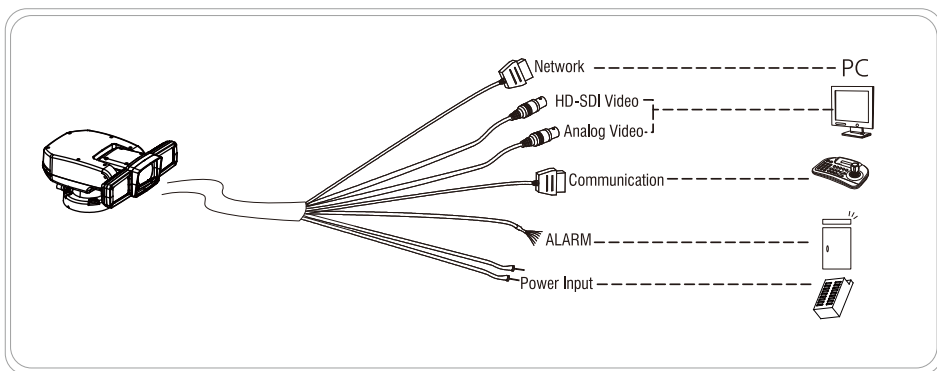
SW 1 RS MODE



8	RS MODE
0	RS-422
1	RS-485

4.3 Cable Connection

4.3.1 Basic Diagram of Cable Connection



4.3.2 Video Output Connection

Connect the video out (BNC) to the monitor or HD SDI video input of DVR.

4.3.3 RS-485 / RS-422 Communication Connection

It can be remotely controlled by an external device or control system, such as a control keyboard or DVR, using RS-485 half-duplex, RS-422 duplex or simplex serial communication signals.

After inserting 4pin communication terminal of accessory package to green port of main cable, connect marked RX+, RX- to TX+ and TX- of the RS-485 control system. If control system is RS-422, connect TX+, TX- of controller to RX+ and RX- of the camera. And also connect the TX+, TX- of camera to RX+, RX- of the control device respectively. Total length of the cable for communication should not exceed 1.2Km.

4.3.4 Alarm Connection

It can operate specific motion receiving external Alarm Device(Sensor) signal

Connect the alarm cable to external Alarm Device referring to below, directions. (Alarm 1, IP Digital Input 1)

- Black color line : Ground / Red color lines : Alarm
- Black color line : Ground / White color lines : IP Digital Input

4.3.5 Power Connection

- Connect the 2 lines of power cable to the AC terminal of SMPS.
- Connect the main cable to the SMPS terminal.

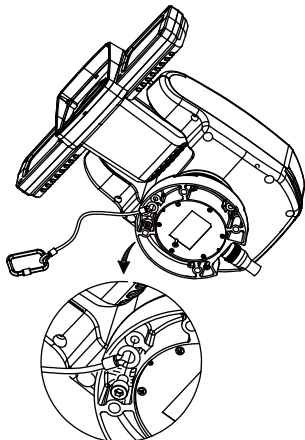
Main cable	SMPS
Red	+ (Red)
Black	- (Black)

- Connect the power of DC 24V to this camera.
- Use certified Class 2 power supply transformers only.

4.4 Installation

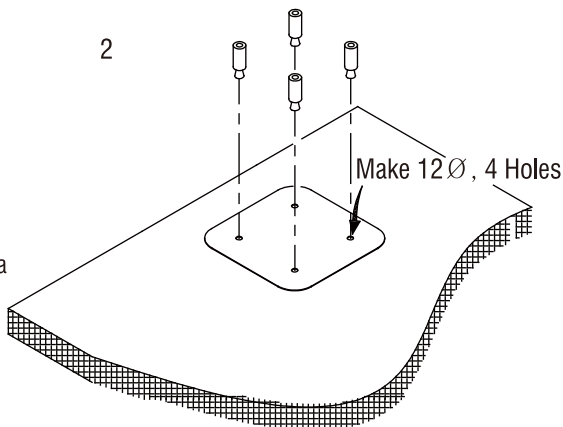
- The following steps of installation and connection work should only be done by qualified service personnel or system installers and should conform to all local codes.
- Be sure to switch the camera off before installation is completed.
- Do not install the camera near the air outlet of an air conditioner.
- Before installation, set camera system with Dip-switches on the 8~9 pages.

1



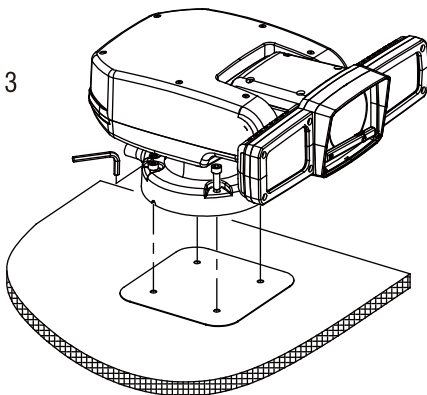
Connect the detaching hook to the camera base and base plate using the enclosed M8 bolt.

2



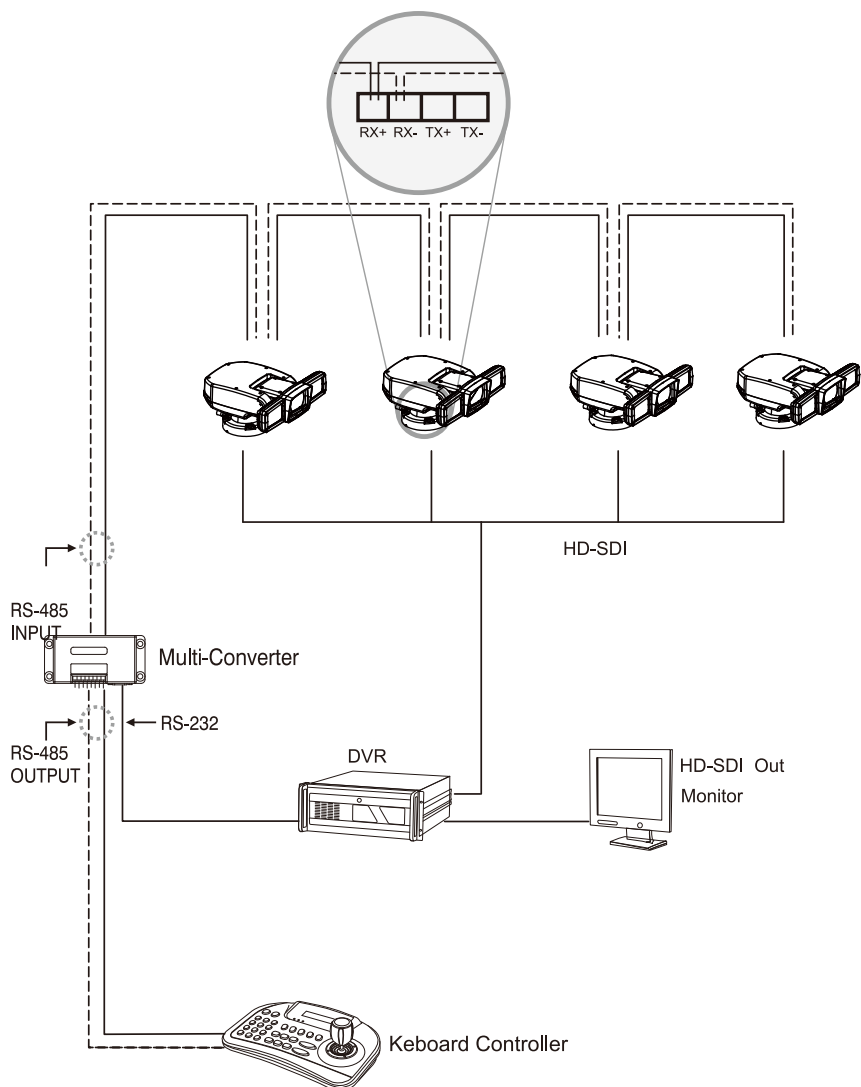
Attach the enclosed guide sticker to the proper position and make 4 holes with 12Ø. And fix the anchor bolts to those holes.

3



Fix the 4 M8 bolts to 4 anchor bolts using an L-wrench.

4.5 Basic Configuration



5. MAIN SETUP MENU

5.1 Initialize

When the device is powered on, you can check the address, version, protocol and video setting values.

```
INITIALIZE
PTZ ID      : 001
VERSION     : X. XX
D-OUTPUT    : 1080p30/NTSC

PROTOCOL    : PELCO-D
BAUDRATE    : 2400.N.1
CAMERA      : XX XXX.OK
              VER: XX,XX
▷ PAN INIT   : ..... OK
▷ TILT INIT  : ..... OK

▷ NORMAL SETTING WAIT . .
```

5.2 Motion Setting

5.2.1 Preset

MAIN MENU

MOTION ▶

DOME ▶

CAMERA ▶

CLEAR ▶

FACTORY SET

PTZ RESET

EXIT
< NEAR / RIGHT ▷ MOTION >

MOTION MENU

PRESET ▶

TOUR ▶

SCAN ▶

PATTERN ▶

AREA ▶

ALARM ▶

PRIVACY ▶

HOME POS ▶

BACK EXIT
< NEAR / RIGHT ▷ PRESET >

The preset function is that the camera memorizes positions of the pan/tilt and zoom. This function is a representative function of the speed dome which can find memorized preset positions just by selecting the preset No. A Maximum of 255 Preset positions are toured in order.

(1) Select the Preset number

P001 : Defined Preset number / 001 : Undefined Preset number

Move :  JOYSTICK

Select : 

PRESET MENU

NUMBER : 001

TITLE :

FOCUS : AUTO

POSITION SET ▶

EXIT TIME : OFF

EXTEND SET ▶

SAVE CLR BACK EXIT
< NEAR / RIGHT ▷ PRESETNUM >

PRESET MENU

PRESET SELECT (1)

001 002 003 004 005

006 007 008 009 010

011 012 013 014 015

016 017 018 019 020

021 022 023 024 025

026 027 028 029 030

031 032 033 034 035

036 037 038 039 040

041 042 043 044 045

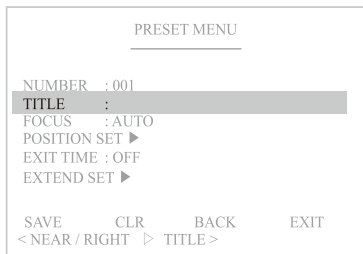
<SEL ▷NEAR /MOVE & JOYSTICK>

<EXIT ▷FOCUS NEAR>

(2) Set the Preset TITLE

Move :  JOYSTICK Select :  or  JOYSTICK Delete :  or  JOYSTICK

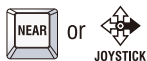
It's available to set the desired TITLE, displayed on the executing screen of Preset.



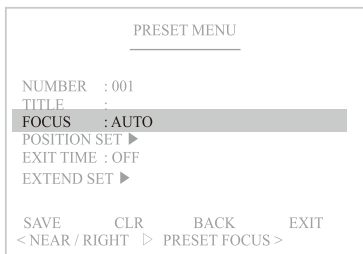
After the TITLE is set, push the NEAR button to exit.

(3) Select the focus mode for Preset

① Select the Focus menu



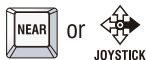
② Move and set the Focus Menu



On focus menu, there are 3 modes : AUTO, MANUAL, ONESHT. It allows detailed settings for the preset.

(4) Define the Preset position

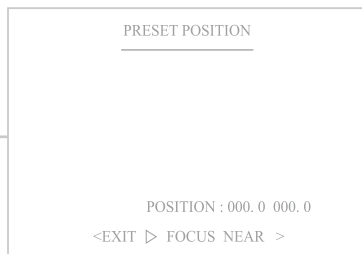
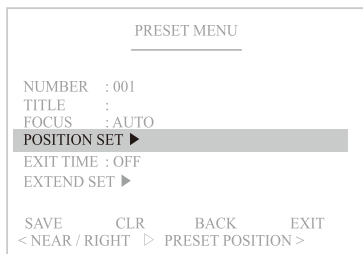
① Select the Position menu



② Move and set the position



③ Set & Back



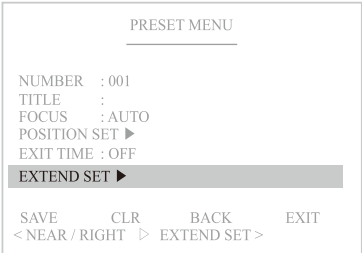
(5) EXIT TIME



Setting the dwell time to exit Preset mode after completing Preset working.
(OFF / 5SEC / 10SEC / 20SEC / 30SEC / 1MIN / 5MIN / 10MIN / 30MIN) ※ Default : OFF

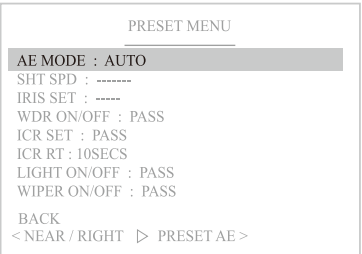
Select :  or  Set ON :  Set OFF : 

(6) EXTEND SET



Set the additional preset functions.

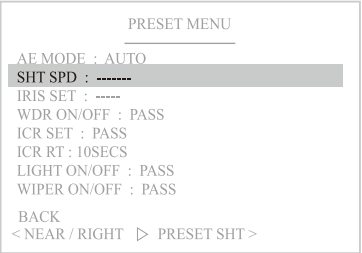
AE MODE



Select AUTO, SHUTTER, IRIS and PASS MODE.

Select :  or  Set ON :  Set OFF : 

SHUTTER SPD



Set shutter speed in the AE MODE.

Select :  or  Set ON :  Set OFF : 

IRIS SETTING

```

PRESET MENU
AE MODE : AUTO
SHT SPD : -----
IRIS SET : -----
WDR ON/OFF : PASS
ICR SET : PASS
ICR RT : 10SECS
LIGHT ON/OFF : PASS
WIPER ON/OFF : PASS
BACK
<NEAR / RIGHT > PRESET IRIS >
    
```

Set IRIS value in the AE MODE. (0~13)

Select :  or  Set ON :  Set OFF : 

WDR ON/OFF

```

PRESET MENU
AE MODE : AUTO
SHT SPD : -----
IRIS SET : -----
WDR ON/OFF : PASS
ICR SET : PASS
ICR RT : 10SECS
LIGHT ON/OFF : PASS
WIPER ON/OFF : PASS
BACK
<NEAR / RIGHT > PRESET WDR>
    
```

Set WDR funtion.

Select PASS, ON and OFF.

Select :  or  Set ON :  Set OFF : 

ICR SETTING

```

PRESET MENU
AE MODE : AUTO
SHT SPD : -----
IRIS SET : -----
WDR ON/OFF : PASS
ICR SET : PASS
ICR RT : 10SECS
LIGHT ON/OFF : PASS
WIPER ON/OFF : PASS
BACK
<NEAR / RIGHT > PRESET ICR>
    
```

Select PASS, DAY, NIGHT and AUTO in the IR LED.

Select :  or  Set ON :  Set OFF : 

ICR RT SETTING

```

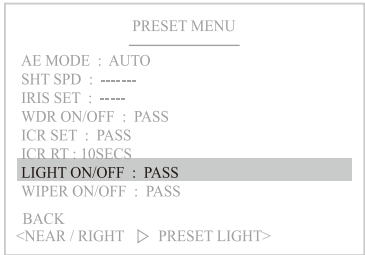
PRESET MENU
AE MODE : AUTO
SHT SPD : -----
IRIS SET : -----
WDR ON/OFF : PASS
ICR SET : PASS
ICR RT : 10SECS
LIGHT ON/OFF : PASS
WIPER ON/OFF : PASS
BACK
<NEAR / RIGHT > PRESET ICR RT>
    
```

After checking an image, Set IR synchronization time.

(Factory default is 10SEC)

Select :  or  Set ON :  Set OFF : 

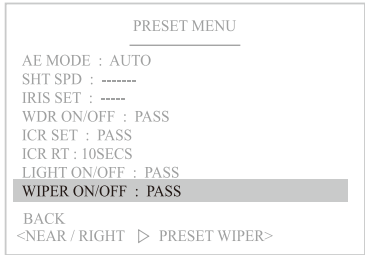
LIGHT ON/OFF



Select PASS, ON and OFF.



WIPER ON/OFF

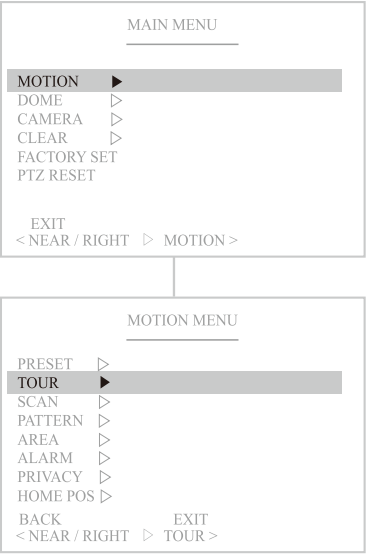


Select PASS, ON and OFF.





- (7) "Save" above setting Pattern data to the memory.
- (8) "CLR" means above setting Pattern data will not be saved and be cleared.
- (9) "BACK" means it goes back to the previous menu :Motion.
- (10) "EXIT" means it goes out of MENU.


5.2.2 Tour




Tour Quick Operating Guide

Set Tour : 71~78 +  3sec.

Set Tour : 1~8 +  3sec.

Go to Tour : 71~78 + 

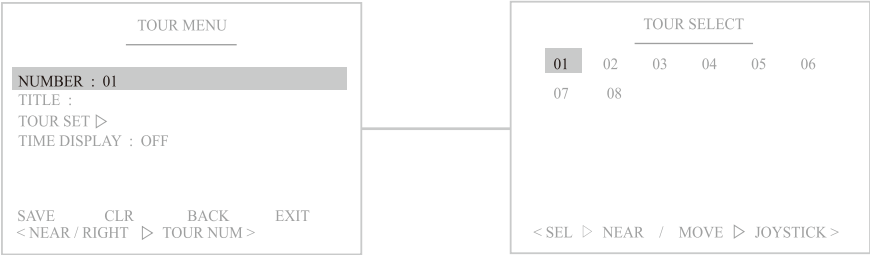
Go to Tour : 1~8 + 

The Tour function consists of several presets run by turn. It is also adjusts the moving speed (1~63 step) and dwell time (1~99secs). Maximum of 8 Tour functions are toured in order.
(※ 1 Tour can be set for 16 presets.)

(1) Select the Tour number

T01 : Defined Tour number / 01 : Undefined Tour number

Move :  Select : 



(2) Set the Tour TITLE

Move :  Select :  or  Delete :  or 

It's available to set the desired TITLE, displayed on the executing screen of Tour.

TOUR MENU

NUMBER : 01
TITLE :
 TOUR SET >
 TIME DISPLAY : OFF

SAVE CLR BACK EXIT
 <NEAR / RIGHT > TOUR TITLE >

TOUR TITLE EDIT



TITLE :
 0 1 2 3 4 5 6 7 8 9 () A B C D E F G H I J K L M N O P Q R S T U V W X Y Z . / , + - = < > O


<STORE > TELE MOVE > JOYSTICK >
 <DELETE > WIDE BACK > NEAR >


After the TITLE is set, push the NEAR button to exit.

(3) Define the Preset position

- ① Move to the set-up window ② Move and set the position ③ Set & Back

 or 





TOUR MENU

NUMBER : 01
 TITLE :
TOUR SET ▶
 TIME DISPLAY : OFF

SAVE CLR BACK EXIT
 <NEAR / RIGHT > TOUR SET >

TOUR EDIT (01)

NO	PRESET	SPEED	DWELL
01	01	63	01
02	02	63	01
03	XX	XX	XX
04	XX	XX	XX
05	XX	XX	XX
06	XX	XX	XX
07	XX	XX	XX
08	XX	XX	XX
<SEL & NEAR		PRESET & LEFT>	
<SEL & NEAR		DELETE WIDE>	

TOUR MENU
PRESET SELECT 1

PO01 002 003 004 005
 006 007 008 009 010
 011 012 013 014 015
 016 017 018 019 020
 021 022 023 024 025
 026 027 028 029 030
 031 032 033 034 035
 036 037 038 039 040
 041 042 043 044 045

<SEL >NEAR / MOVE & JOYSTICK>
 <EXIT> FOCUS NEAR




(4) Time Display


TOUR MENU

NUMBER : 01
 TITLE :
 TOUR SET >
TIME DISPLAY : OFF

SAVE CLR BACK EXIT
 <NEAR / RIGHT > TIME DISPLAY >

Display the remain time of each Preset dwell time during Tour operation.(OFF / ON) ※ Default : OFF

Select :  or  Set ON : 

Set OFF : 

TOUR MENU

NUMBER : 01
TITLE :
TOUR SET ▷
TIME DISPLAY : OFF

SAVE

CLR

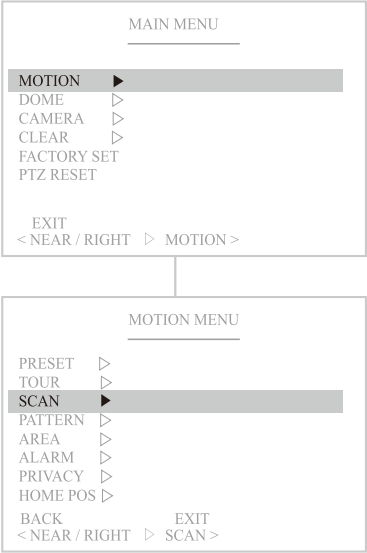
BACK

EXIT

< NEAR ▷ DATA SAVE >

- (4) "Save" above setting Pattern data to the memory.
- (5) "CLR" means above setting Pattern data will not be saved and be cleared.
- (6) "BACK" means it goes back to the previous menu :Motion.
- (7) "EXIT" means it goes out of MENU.

5. 2. 3 Scan



Scan Quick Operating Guide

Set Scan : 81~88 + 3sec.

Set Scan : 1~8 + 3sec.

Go to Scan : 81~88 +

Go to Scan : 1~8 +

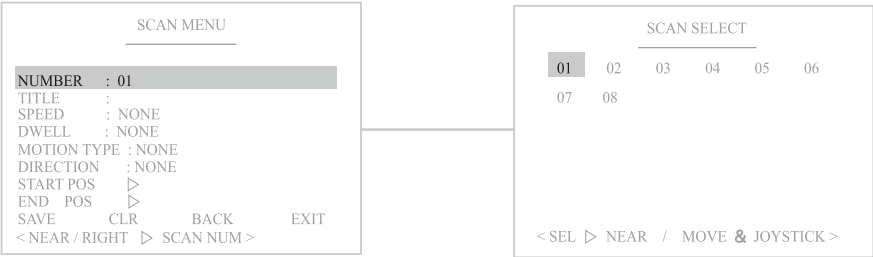
The Scan function means that the camera keeps panning between two programmed pan positions. It is also adjusts the moving speed(1~63 step). Maximum 8 Scan functions are toured in order.

(1) Select the Scan number

S01 : Defined Scan number / 01 : Undefined Scan number

Move : Select :

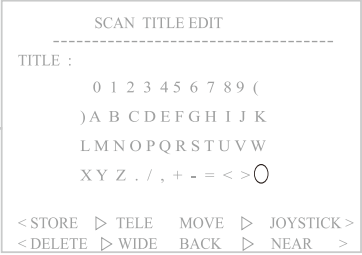
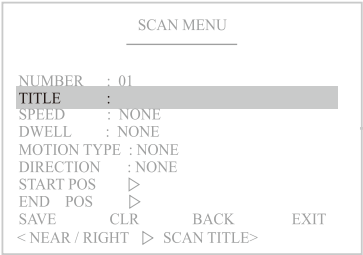
JOYSTICK



(2) Set the Scan TITLE

Move :  Select :  or  Delete :  or 

It's available to set the desired TITLE, displayed on the executing screen of Scan.



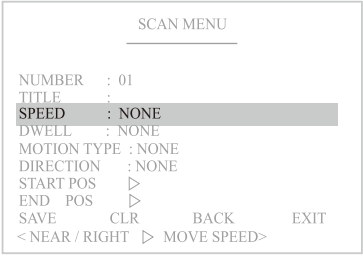
After the TITLE is set, push NEAR button to go out.

(3) Set the Scan speed

Increase :  or 

Decrease :  or 

It adjusts the moving speed from 1~63 steps.



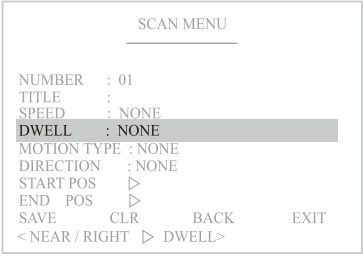
(4) Set the Dwell Time

Increase :  or 

Decrease :  or 

Dwell time means the time that the camera stay at the start & end pan positions.

It's adjustable from 00~59 seconds.



(5) Set the Motion Type

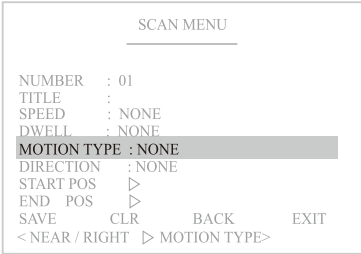
Set PAN/TILT direction

When PAN is set,PAN SCAN is proceeded with the specified coordinate value.

When TILT is set,TILT SCAN is proceeded with the specified coordinate value.

Select :  or  Set ON : 

Set OFF : 



(6) Set the Direction

PAN : Select Clock Wise or C_Clock Wise direction

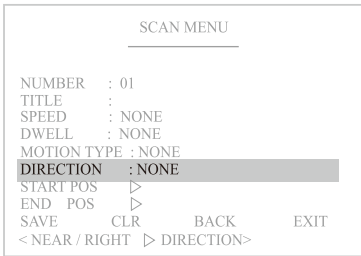
When select C_Clock WISE, counterclockwise progression

When select Clock WISE, clockwise progression

TILT : Set the UP & DOWN.

Select :  or  Set ON : 

Set OFF : 



(7) Define the Start position

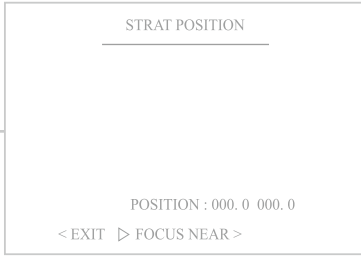
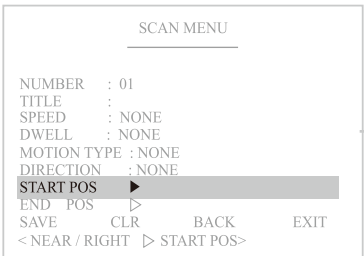
① Select Start Pos menu



② Move and set the position



③ Go back



(8) Define the End position

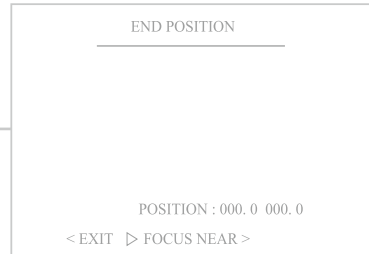
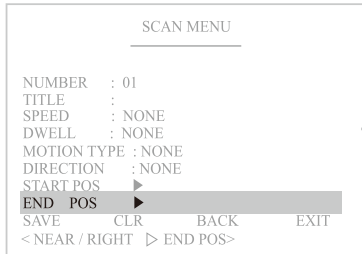
① Select End Pos menu



② Move and set the position



③ Go back



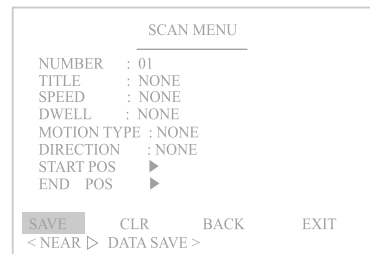
- When Motion type is PAN, Pan is available.
- When Motion type is TILT, TILT is available.

(9) “Save” above setting Pattern data to the memory.

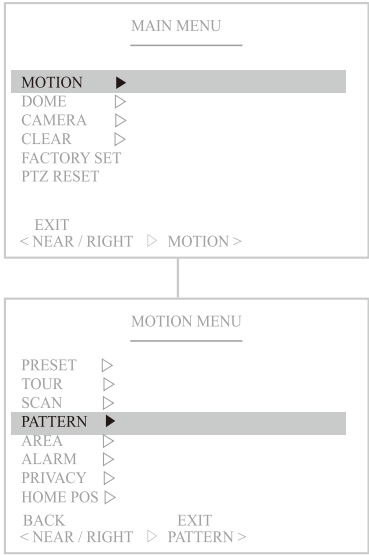
(10) “CLR” means above setting Pattern data will not be saved and be cleared.

(11) “BACK” means it goes back to the previous menu :Motion.

(12) “EXIT” means it goes out of MENU.



5. 2. 4 Pattern



Pattern Quick Operating Guide

Set Pattern : 91~94 + 3sec.

Set Pattern : 1~4 + 3sec.

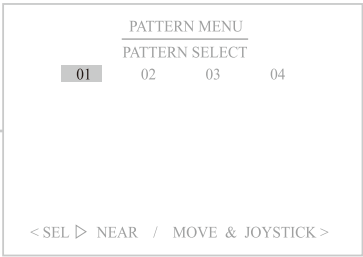
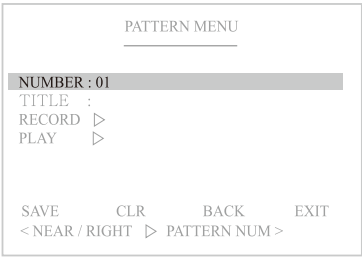
Go to Pattern : 91~94 +

Go to Pattern : 1~4 +

The Pattern function memorizes User’s random moving path and zoom ratio. Total recording time limit is 65secs and maximum 4 Pattern functions are toured in order.

- (1) Select the Pattern number
PAT01 : Defined Pattern number / 01 : Undefined Pattern number

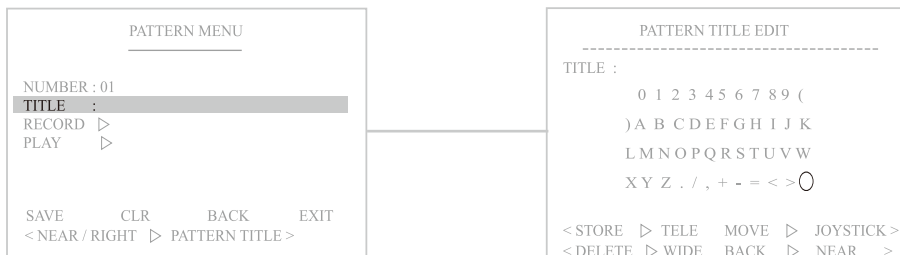
Move : Select :



(2) Set the Pattern TITLE

Move :  JOYSTICK Select :  or  JOYSTICK Delete :  or  JOYSTICK

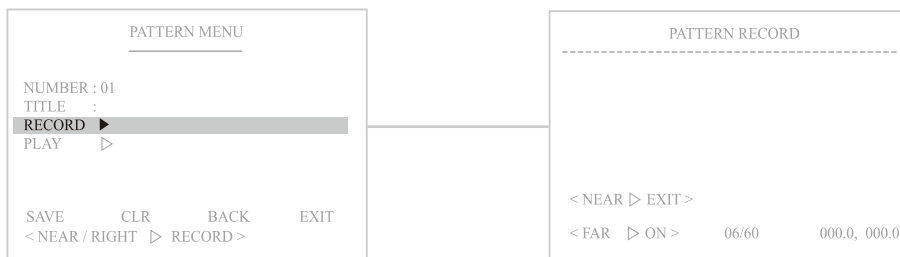
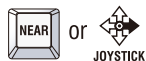
It's available to set the desired TITLE, displayed on the executing screen of Pattern.



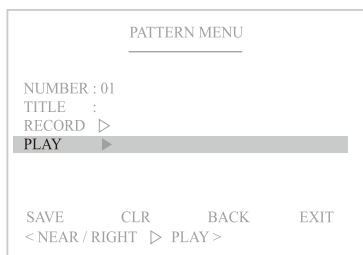
After the TITLE set, push NEAR button to go out.

(3) Record and Save the User's random Pattern data

- ① Select the "Record" Menu ② Move and record the pattern ③ NEAR -> EXIT
FAR -> RECORD ON



(4) Play back the recorded Pattern data



- (5) "Save" above setting Pattern data to the memory.
- (6) "CLR" means above setting Pattern data will not be saved and be cleared.
- (7) "BACK" means it goes back to the previous menu :Motion.
- (8) "EXIT" means it goes out of MENU.

PATTERN MENU

NUMBER : 01

TITLE :

RECORD ▷

PLAY ▷

SAVE

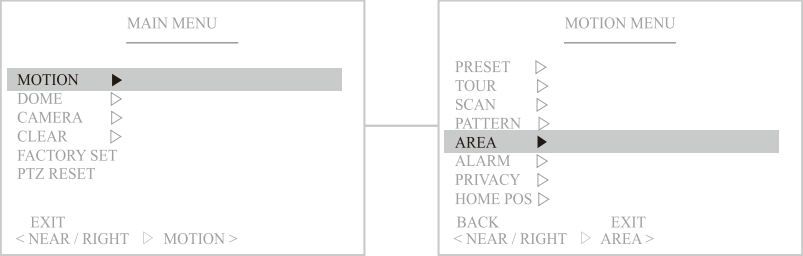
CLR

BACK

EXIT

< NEAR ▷ DATA SAVE >

5. 2. 5 Area



The Area function means that it displays the Area name between two programmed pan positions. Maximun 16 Area functions are toured in order.

- (1) Select the Area number
AR 01 : Defined Area number / 01 : Undefined Area number

Move :  JOYSTICK Select : 



- (2) Set the Area TITLE

Move :  JOYSTICK Select :  or  JOYSTICK Delete :  or  JOYSTICK

It's available to set the desired TITLE, displayed on the executing screen of Area.



After the TITLE set, push NEAR button to go out.

(3) Set the Direction

Select :  or  Set ON :  Set OFF : 

C_Clock WISE is counterclockwise mark, Clock WISE is clockwise mark.

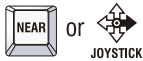
AREA MENU

NUMBER : 01
 TITLE :
 DIRECTION : <C_CLOCK WISE>
 S PAN POS. ▷
 E PAN POS. ▷

SAVE CLR BACK EXIT
 < CHANGE ▷ UP/DN SEL ▷ NEAR >

(4) Define the Start pan position

① Select the "Start Pan Pos" menu



② Move and set the position



③ Set & Back



AREA MENU

NUMBER : 01
 TITLE :
 DIRECTION : NONE
 S PAN POS. ▶
 E PAN POS. ▷

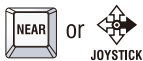
SAVE CLR BACK EXIT
 < NEAR / RIGHT ▷ START POS >

AREA START PAN POSITION

POSITION : 000.0 000.0
 < EXIT ▷ FOCUS NEAR >

(5) Define the END pan position

① Select the "END Pan Pos" Menu



② Move and set the position



③ Set & Back



AREA MENU

NUMBER : 01
 TITLE :
 DIRECTION : NONE
 S PAN POS. ▷
 E PAN POS. ▶

SAVE CLR BACK EXIT
 < NEAR / RIGHT ▷ END POS >

AREA END PAN POSITION

POSITION : 000.0 000.0
 < EXIT ▷ FOCUS NEAR >

- (6) "Save" above setting Area data to the memory.
- (7) "CLR" means above setting Area data will not be saved and be cleared.
- (8) "BACK" means it goes back to the previous menu :Motion.
- (9) "EXIT" means it goes out of MENU

AREA MENU

NUMBER : 01

TITLE :

DIRECTION : NONE

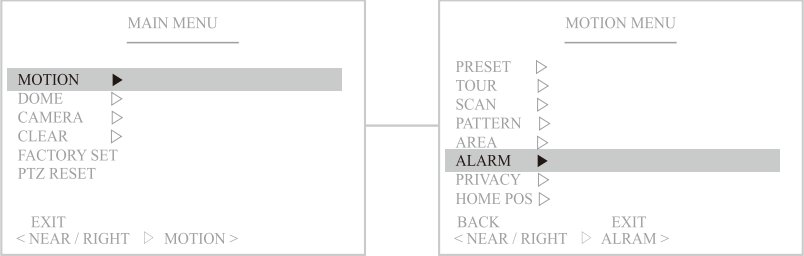
S PAN POS. ▸

E PAN POS. ▸

SAVE CLR BACK EXIT

< NEAR ▸ DATA SAVE >

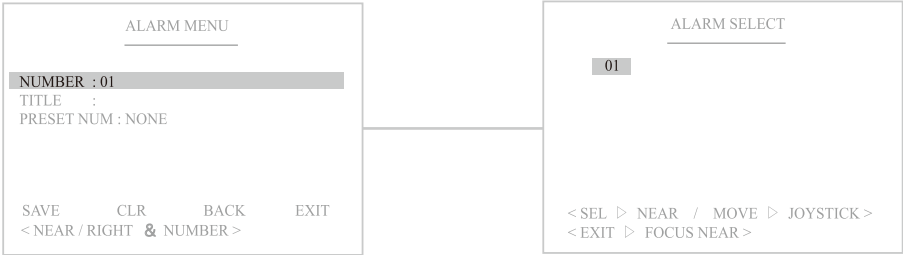
5.2.6 Alarm



The Alarm function means that the camera moves to the programmed Preset position by the Alarm trigger.
1 Alarm functions are toured in order.

- (1) Select the Alarm number
A01 : Defined Alarm number / 01 : Undefined Alarm number

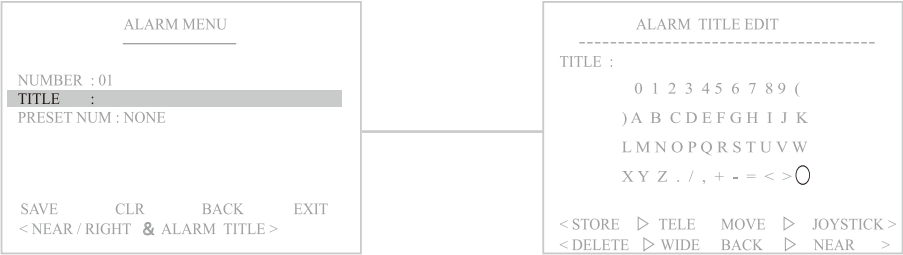
Move :  JOYSTICK Select : 



- (2) Set the Alarm TITLE

Move :  JOYSTICK Select :  or  JOYSTICK Delete :  or  JOYSTICK

It's available to set the desired TITLE, displayed on the executing screen of Alarm.



After the TITLE is set, push the NEAR button to exit.

(3) Define the Preset position with Alarm trigger

① Select the “Preset Num”

② Move and set the position

③ Set & Back



OR



JOYSTICK



JOYSTICK



ALARM MENU

NUMBER : 01
TITLE :
PRESET NUM : NONE

SAVE CLR BACK EXIT
< NEAR / RIGHT & SELECT PRESET >
< MOVE & NEAR / JOYSTICK >

PRESET SELECT

001	002	003	004	005	006
007	008	009	010	011	012
013	014	015	016	017	018
019	020	021	022	023	024
025	026	027	028	029	030
031	032	033	034	035	036
037	038	039	040	041	042
043	044	045	046	047	048
049	050	051	052	053	054

<EXIT > FOCUS NEAR>

(4) “Save” above setting Alarm data to the memory.

(5) “CLR” means above setting Alarm data will not be saved and be cleared.

(6) “BACK” means it goes back to the previous menu :Motion.

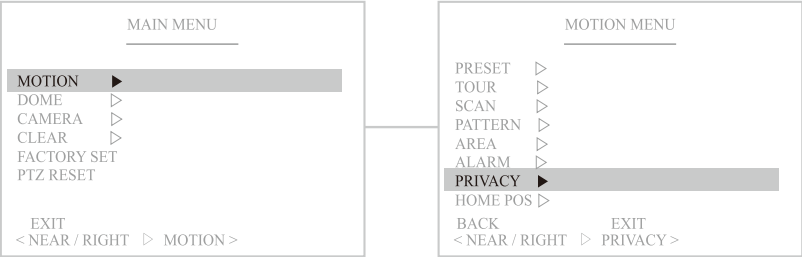
(7) “EXIT” means it goes out of MENU

ALARM MENU

NUMBER : 01
TITLE :
PRESET NUM : NONE

SAVE CLR BACK EXIT
< NEAR > DATA SAVE >

5. 2. 7 Privacy Zone Masking



The Privacy Zone Masking function means that it sets the blocking territories to prevent camera functions for the privacy of personal reasons. Maximum of 8 Privacy Zone Masking functions are toured in order.

(1) Select the Privacy Zone number

PR01 : Defined Alarm number / 01 : Undefined Alarm number

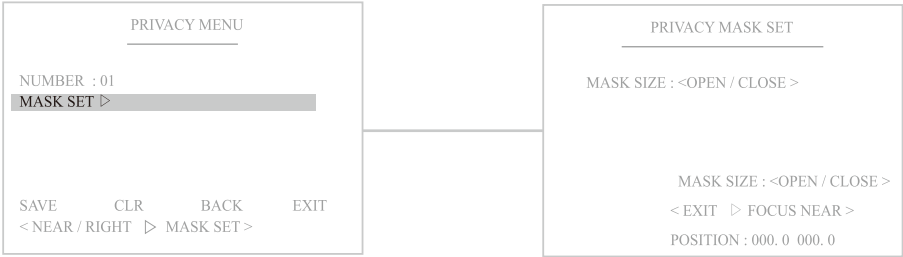
Move :  Select : 



(2) Mask set

Move :  Select :  or  Delete :  or 

It's available to set the desired position and size of the blocking territories freely.



After the Privacy Zone is set, push the NEAR button to go out.

(3) “Save” above settings of Privacy Zone data to the memory.

(4) “CLR” means above setting of Privacy Zone data will not be saved and be cleared.

(5) “BACK” means it goes back to the previous menu :Motion.

(6) “EXIT” means it goes out of MENU.

PRIVACY MENU

NUMBER : 01
MASK SET ▾

SAVE

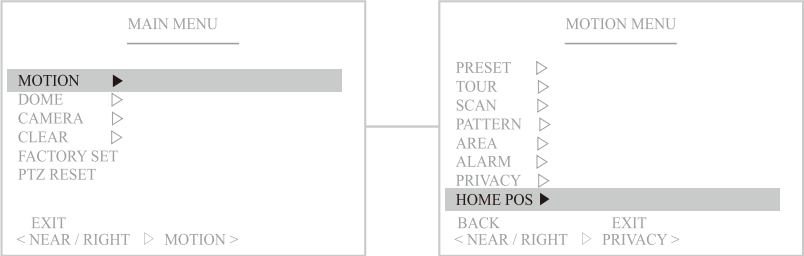
CLR

BACK

EXIT

< NEAR ▾ DATA SAVE >

5. 2. 8 Home Position



Home Postion specify the main image display area.

(1) Home Position ON/OFF setting

Move :  Select : 

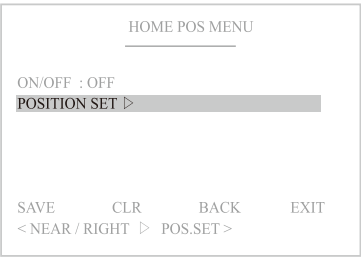
JOYSTICK



(2) Home Position SET

Move :  Select : 

JOYSTICK



Quick Operating Guide
Go to Home Position : 255+SET



5.3 Dome Setting

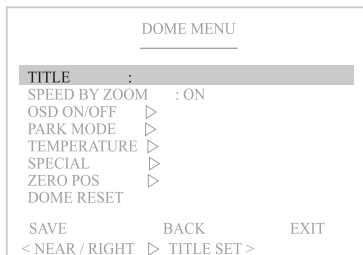


Pan, Tilt, Zoom motion is adjustable in the “Dome Setting” Menu.

5.3.1 Set the Dome camera title

Move :  JOYSTICK Select :  or  JOYSTICK Delete :  or  JOYSTICK

It's available to set the desired camera title.



After the TITLE is set, push NEAR button to exit.

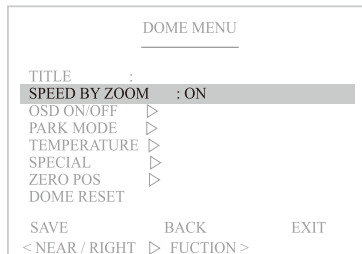
5.3.2 Speed by Zoom ON/OFF Set

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

(Available to check with max zoom rate.)

Select :  JOYSTICK or  Set ON :  JOYSTICK

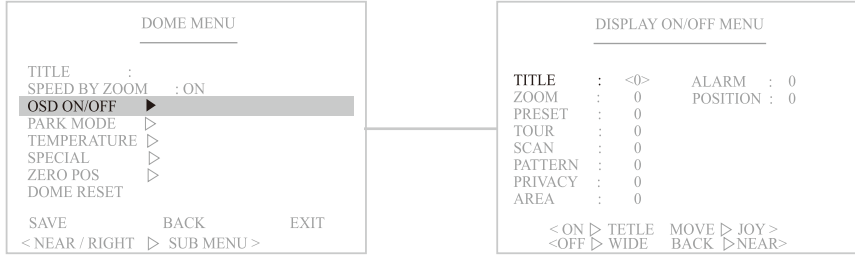
Set OFF : 



5. 3. 3 OSD ON/OFF Set

You can select the OSD ON to shown on the screen or clear by selecting OFF in this function.

Select :  or  Set ON :  Set OFF : 

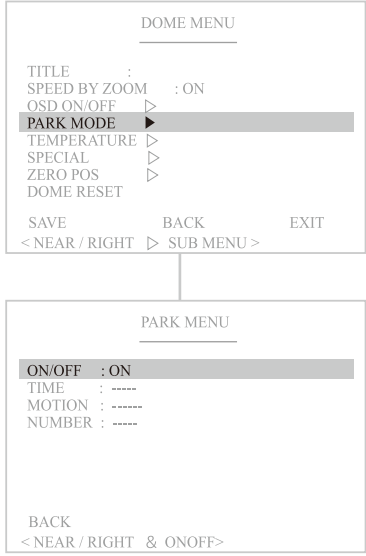


5. 3. 4 PARK MODE

This function enables to locate the camera to specific position automatically if operator doesn't operate the controller for a while.

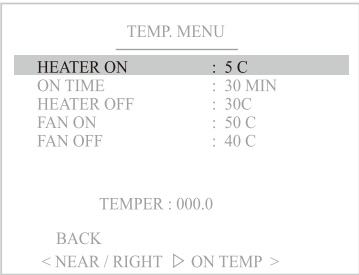
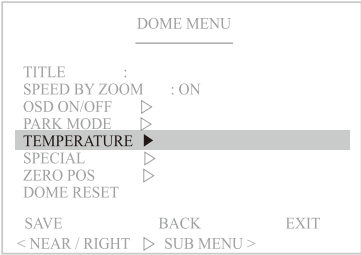
 or 

- ON/OFF : Select ON/OFF
- TIME : Select 10 sec~1 HOUR
- MOTION : Set PRESET / TOUR / SCAN / PATTERN
- NUMBER
- PRESET : 1~255
- TOUR : 1~8
- SCAN : 1~8
- PATTERN : 1~4



5. 3. 5 TEMP MODE

It shows you the current temperature and you can also set the value manually. The compulsory Fan & Heater operation is a useful function to remove humidity.

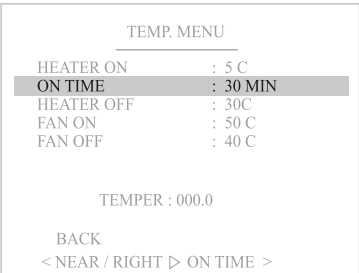


(1) HEATER ON

Set the operating temperature of the heater.(0~70℃)

Select :  or  Set ON : 

Set OFF : 

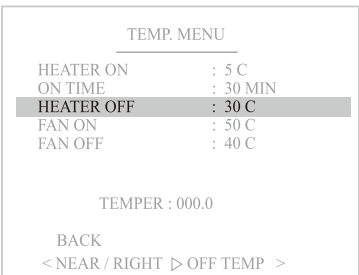


(2) ON TIME

Set the operating time of the heater.
- By 10min. (10~60 min.)

Select :  or  Set ON : 

Set OFF : 



(3) HEATER OFF

Set the temperature of heater OFF. (0~70℃)

Select :  or  Set ON : 

Set OFF : 

TEMP. MENU	
HEATER ON	: 5 C
ON TIME	: 30 MIN
HEATER OFF	: 30 C
FAN ON	: 50 C
FAN OFF	: 40 C
TEMPER : 000.0	
BACK	
< NEAR / RIGHT ▷ FAN ON >	

(4) FAN ON

Set the operating temperature of the Fan. (0~70℃)

Select :  or  Set ON : 

Set OFF : 

TEMP. MENU	
HEATER ON	: 5 C
ON TIME	: 30 MIN
HEATER OFF	: 30 C
FAN ON	: 50 C
FAN OFF	: 40 C
TEMPER : 000.0	
BACK	
< NEAR / RIGHT ▷ FAN OFF >	

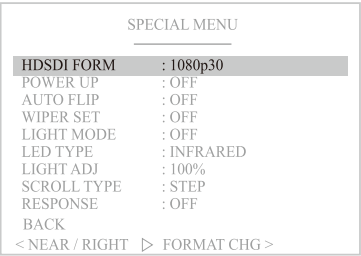
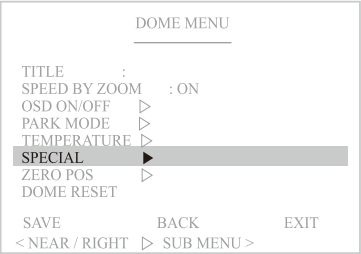
(5) FAN OFF

Set the temperature of Fan OFF. (0~70℃)

Select :  or  Set ON : 

Set OFF : 

5. 3. 6 Special



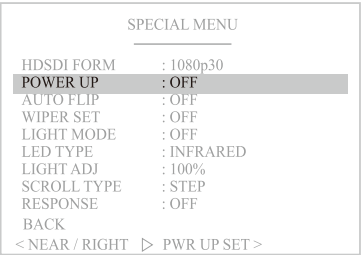
(1) HD SDI FORMAT

PAL : 1080p25 / 720P50 / 1080i50 / 1080i59
NTSC : 1080p30 / 720P60 / 1080i60 / 1080i59

※ HD SDI FORMAT can be variable according to product specification

Select :  or  Set ON : 

Set OFF : 



(2) POWER UP

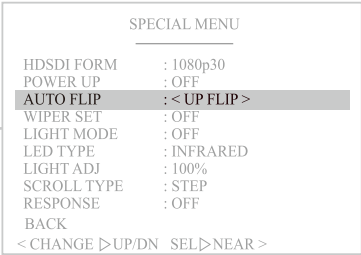
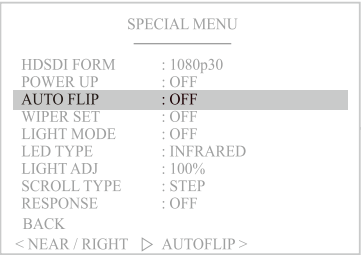
When this function is ON, the camera memorizes the latest action and restores, it from sudden power failure.

※ Factory default is OFF.

Select :  or  Set ON : 

Set OFF : 

(3) AUTO FLIP



OFF : AUTO FLIP OFF
※ Factory default is OFF.

UP FLIP
* TILT UP FLIP.

SPECIAL MENU	
HDSDI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: <DN FLIP>
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
<CHANGE▷UP/DN SEL▷NEAR>	

DN FLIP

* TILT DOWN FLIP

SPECIAL MENU	
HDSDI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: <U&D FLIP>
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
<CHANGE▷UP/DN SEL▷NEAR>	

UP_DN FLIP




* TILT UP and DOWN FLIP

SPECIAL MENU	
HDSDI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: OFF
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
<NEAR / RIGHT ▷ ONOFF>	

(4) WIPER SET

Select ON/OFF to use the wiper function.

※ factory default is OFF.

Select :  or  Set ON : 

Set OFF : 

SPECIAL MENU	
HDSDI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: OFF
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
<NEAR / RIGHT ▷ TYPE>	

(5) LIGHT MODE

Manually select IR ON/OFF IR operation.

Select :  or  Set ON : 

Set OFF : 

SPECIAL MENU	
HDSDI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: OFF
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
<NEAR / RIGHT ▷ ONOFF>	

(6) LED TYPE

Set the LED.

Select :  or  Set ON : 


Set OFF : 

SPECIAL MENU	
HDSOI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: OFF
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
< NEAR / RIGHT ▷ ADJUST >	

(7) LIGHT ADJ

Set the IR brightness.

Select :  or  Set ON : 

Set OFF : 

SPECIAL MENU	
HDSOI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: OFF
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
< NEAR / RIGHT ▷ TYPE >	

(8) SCROLL TYPE

Set the cursor progress

STEP : by 1 STEP

AUTO : Continuous scroll

Select :  or  Set ON : 

Set OFF : 

SPECIAL MENU	
HDSOI FORM	: 1080p30
POWER UP	: OFF
AUTO FLIP	: OFF
WIPER SET	: OFF
LIGHT MODE	: OFF
LED TYPE	: INFRARED
LIGHT ADJ	: 100%
SCROLL TYPE	: STEP
RESPONSE	: OFF
BACK	
< NEAR / RIGHT ▷ ON/OFF >	

(9) RESPONSE TXD

Tx communication line to transfer the unique value of protocol response.

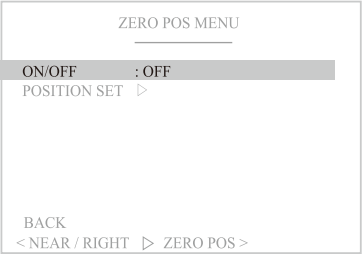
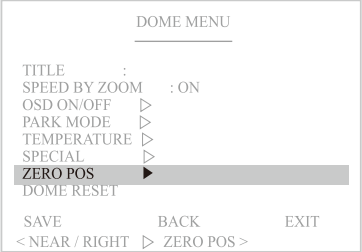
(Use this function when the protocol is pelco-D 5.0 EZ.)

※ Factory default is OFF.





Select :  or  Set ON : 

Set OFF : 

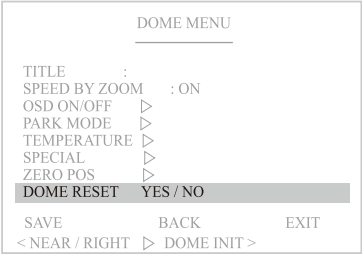
5. 3. 7 ZERO POS



When select ON, the zero position is changeable.
POSITION change 000.0 / 000.0 value.

Select :  or  Set ON : 
Set OFF : 

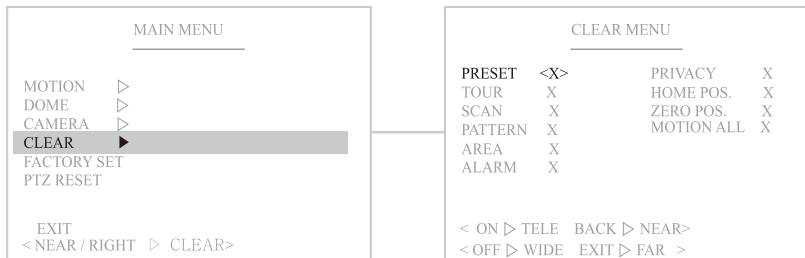
5. 3. 8 DOME RESET




DOME MENU initialization function.

5.4 Clear Setting

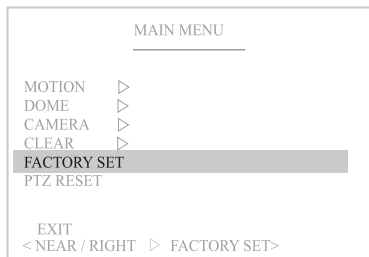
Clears the PTZ position and function value.



select :  or  Set ON : 

Set OFF : 

5.5 Factory set



Clear the DOME, CAMERA and MOTION setting value.



Restore setting values to the factory default.
All existing setting value will be erased.

5.6 PTZ Reset



It is a reset function.

5. 7 Other Quick Opercating Guide

Auto = 240 + set preset

Day = 241 + set preset

Night = 242 + set preset

Wiper On / Off Toggle = 244 + set preset

Heater On / Off Toggle = 245 + set preset

Auto Scan = 99 + set preset

PTZ Menu Open = 95 + set preset(go preset)

Fan On / Off Toggle = 250 + set preset

Camera Factory Set = 253 + set preset

Camera Rens Init = 254 + set preset

PTZ Information = 255 + set preset

6. SPECIFICATIONS

6.1 Mechanical Specifications

6.1.1 MECHANICAL

Pan	: 360° Continuous Pan, 0.1° to 90°/sec.
Pan Preset Speed	: Max.150°/sec, $\pm 0.1^\circ$ Accuracy
Tilt	: 90° to 270° tilt angle
Tilt Preset Speed	: Max.150°/sec, $\pm 0.1^\circ$ Accuracy
Weight	: Approx. 12 Kg/ Packing 15 Kg

6.1.2 ENVIRONMENTAL

Construction	: Die-casing Aluminum & "O" Ring sealed
	: All internal parts are corrosion protected epoxy powder coating
Ingress Protection	: IP66 Outdoor Application
Color	: Black
Operating Temp	: -20°C to 50°C (In continuous operation with Fan & Heater)
Storage Temp	: -30°C to 60°C
Humidity	: 0% to 90%

6.1.3 FUNCTIONS

Preset	: 255 points, less than 0.1° accuracy
Tour	: 8 programmable
Scan	: 8 scans
Pattern	: 4 patterns
Area	: 16 area
Alarm	: 1 alarm
Privacy	: 8 privacy
Flip	: UP / DOWN / UP&DOWN Flip
Address	: Up to 255 selectable ID (setting with Dip-switches)
Data Communication Control	: RS-485/ RS-422
Protocol	: Multiple Protocol
Baud rate	: 2400, 4800, 9600, 19200, 38400, 57600 bps selectable

6.1.4 ELECTRICAL

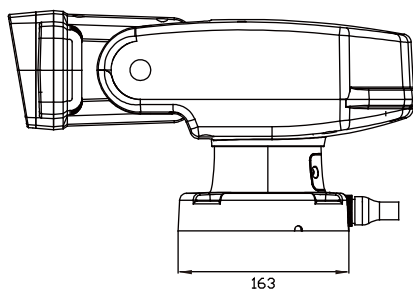
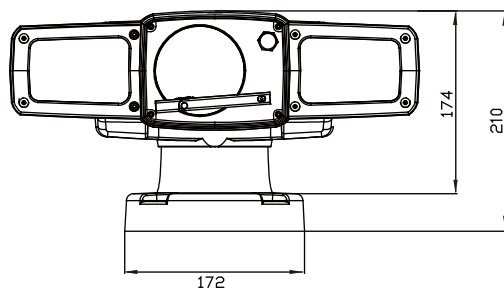
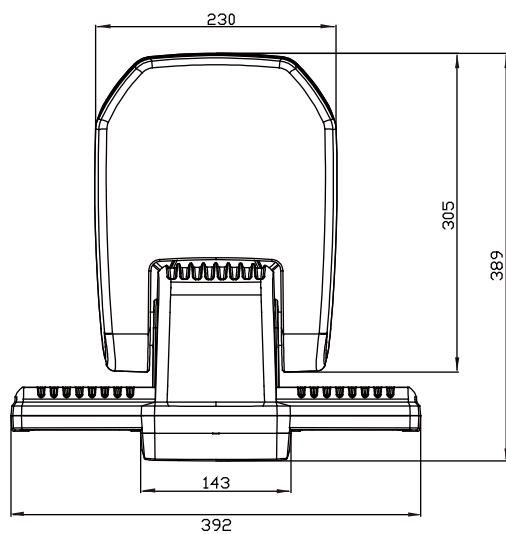
Power	: DC24V ~ DC32V
	: Power adaptor included
Consumption	: Operating(3A), Max(4.0A, IR light on, Heater on)
Fan & Heater	: 10W / 3.4W

* The default operating temperature of fan/heater may need to be changed depending on the installation environment.

6. 2 LED Specification

	Infra Red LED	White LED
Light Distance	200 m(Manual focusing)	
LED	Super IR LED 30 EA (OSRAM 870n) with Lens 12°	Super White LED 30EA (OSRAM 870n) with Lens 12°

7. DIMENSIONS(mm)



Camera OSD Manual

Before installing, operating or adjusting this product, please read this instruction booklet carefully and completely.

TABLE OF CONTENTS

1. Camera Setting

1. 1 ZOOM MODE	3p.
1. 2 FOCUS MODE	4p.
1. 3 WHITE BALANCE	5p.
1. 4 AUTO EXPOSURE	6p.
1. 5 WDR MODE	7p.
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2. CAMERA SPECIFICATION

2. 1 20x Camera	11p.
2. 2 30x Camera	12p.
2. 3 36x Camera	16p.

* This manual is subject to change without notice for product improvement.

1. Camera Setting

Camera menu subject to change without prior notice to upgrade and quality increase and we may use slip sheet for the change.

Please check the camera version and the slip sheet if the camera menu and this manual menu is not matched.

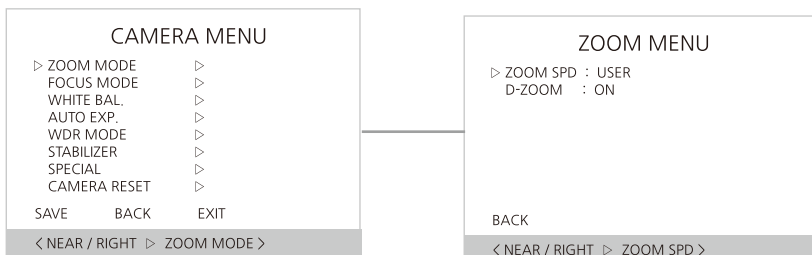


CAMERA MENU

- Functions can be set-up using the Camera menu.

In this menu, user can set the zoom, focus, white balance, auto exposure...etc functions.

1.1 ZOOM MODE



(1) ZOOM SPD

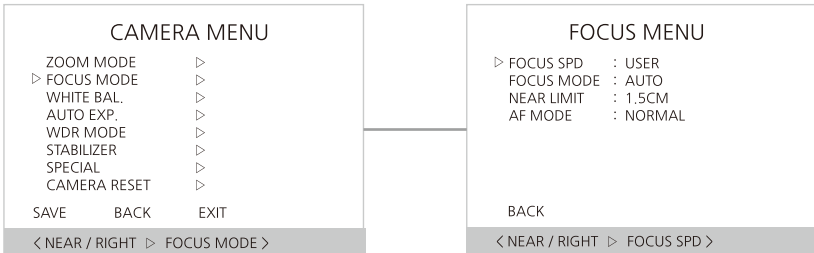
Decide using of digital zoom function and select zoom speed.

Select from 0steps to 7 steps, USER (Standard speed)

(2) D-ZOOM

Decide using of digital zoom function.(ON/ OFF)

1.2 FOCUS MODE



In Focus menu, you can set up the focus speed, focus mode, near limit and AF mode.

(1) FOCUS SPD

Set the speed for camera focusing.

(2) FOCUS MODE

AUTO : The camera adjusts the focus automatically while monitoring the screen continuously in the auto mode.

In the auto focusing mode, 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 PUSH : Make focus with one push button and Zoom in/out operation.

INFINITY : infinity focus is the state where a lens forms an image of an object an infinite distance away.

This corresponds to the point of focus for parallel rays.

(3) NEAR LIMIT

Infinity focus is the state where a lens forms an image of an object an infinite distance away.

This corresponds to the point of focus for parallel rays. (Over Infinity ~ 1.0CM)

(4) AF MODE

Set the Auto Focus Mode. AF MODE is work in the AUTO MODE only.

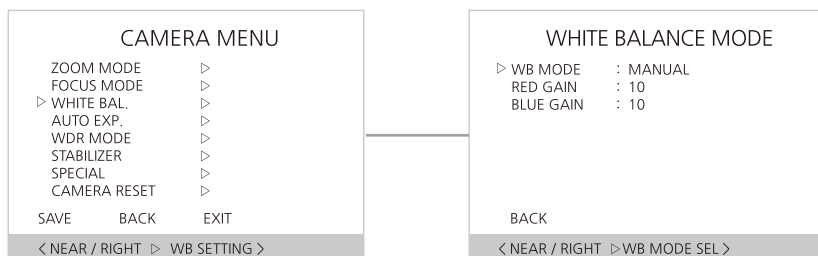
NORMAL : AF is worked when the image is changed.

ZOOM : AF is worked when the zoom rate is changed.

※ ZOOM features may vary by model.

INTERVAL : AF and AF STOP is repetitively worked in settled time.

1.3 WHITE BALANCE



White balance setting is a function revising color temperature to resolve the problem that screen's colors change by the color temperature's difference according to time.

(1) WB MODE

WB MODE: Set the color depend on white balance.

Select AUTO, INDOOR, OUTDOOR, ONEPUSHAWB or MANUAL.

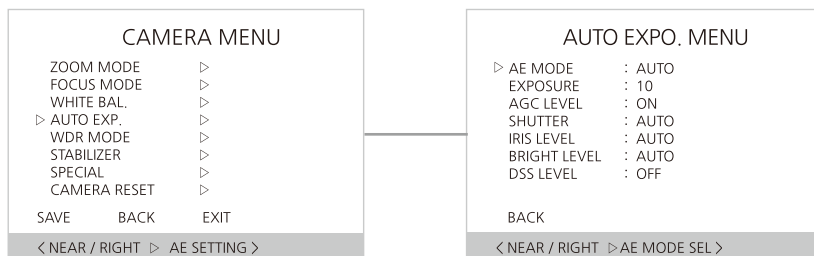
※ Set value depends upon the camera models.

(2) WB MANUAL MODE

Adjust color level (RED, BLUE : 01 ~ 20)

Standard level : RED -> 10 BLUE-> 10

1.4 AUTO EXPOSURE



AE setting is a function adjusting shutter speed according to subject's brightness to get standard amount of exposed light.

(1) AE MODE

Select AUTO, MANUAL, SHUTTER, IRIS or BRIGHT.

(2) EXPO MODE

Set the exposure. (00 ~ 20)

(3) AGC LEVEL

Auto level control function. select ON / OFF

(4) SHUTTER

If you set SHUTTER in the AE MODE, you can control shutter speed.

(1/8 ~ 1/60000)

(5) IRIS LEVEL

If you set IRIS in the AE MODE, you can set the IRIS level from 00 to 13

(6) BRIGHT LEVEL

To change bright level, select BRIGHT in AE MODE and set by NEAR key. Set from 00 ~ 23.

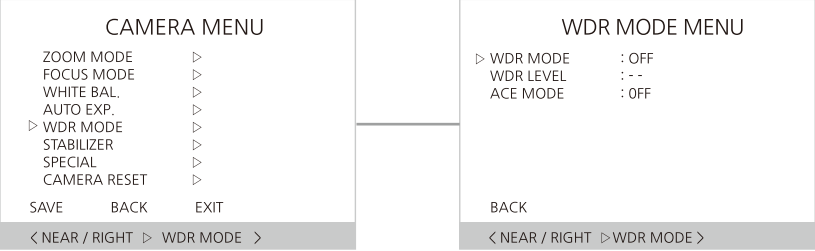
(7) DSS LEVEL

Digital Slow Shutter : Control digital slow shutter speed.

(2x ~ 32x, 64x : 60 or 50 fps mode only)

※ Set value depends upon the camera models.

1.5 WDR MODE



Set WDR funtion. WDR(Wide Dynamic Range)

(1) WDR MODE

Select ON/OFF in the WDR MODE function.

* When WDR MODE is ON, the analog is not output.

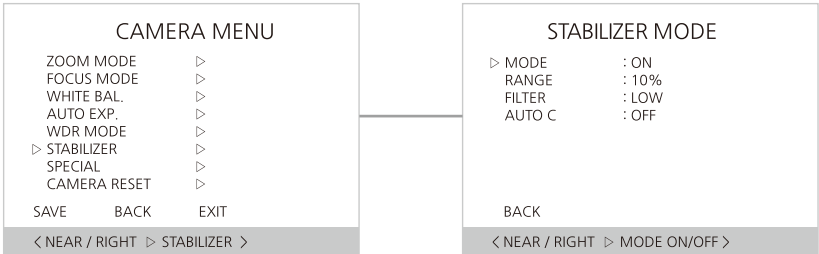
(2) WDR LEVEL

Select WDR LEVEL.(00~04)

(3) ACE MODE

Select ON/OFF in the ACE MODE function.

1.6 STABILIZER



Select Digital Image Stabilizer mode.

(1) STABILIZER MODE

Set the Stabilizer mode.(ON/OFF)

(2) RANGE

Setting the image compensation range.(10%, 20%, 30%)

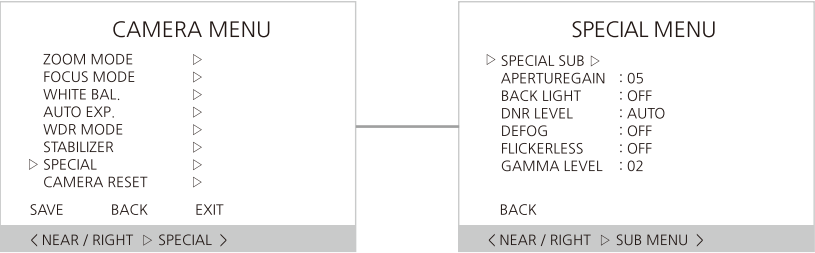
(3) FILTER

Setting the sensitivity DIS function in worst case.(LOW, MIDDLE, HIGH)

(4) AUTO C

Setting Auto Centering mode.(OFF, HALF, FULL)

1.7 SPECIAL

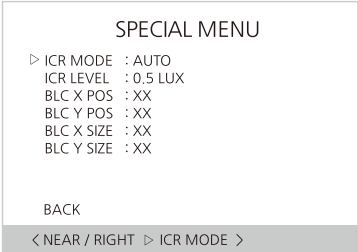


In the Special menu, it's available to set special function of the camera

(1) SPECIAL SUB

ICR MODE : Select AUTO, DAY and NIGHT.

ICR LEVEL : Set ICR Value.(0.5~20.0 lux)



* If you set ON in the BACK LIGHT, you can set the BLC. (Camera Menu->Special Menu->BACK LIGHT : ON)

BLC X POS : Set the BLC X POSION(Default : 06, Change : 0 ~ 19)

BLC Y POS : Set BLC Y POSION(Default : 05, Change : 0 ~ 18)

BLC X SIZE : Set BLC X SIZE(Default : 07, Change : 0 ~ 19)

BLC Y SIZE : Set BLC Y SIZE(Default : 06, Change : 0 ~ 19)

(2) APERTURE GAIN

APERTURE GAIN: Select aperture gain

(3) BACK LIGHT

Select ON/OFF in the BACK LIGHT function.

(4) DNR LEVEL

Select the DNR level from AUTO, LEV1, LEV2, LEV3 and OFF.

(5) DEFOG

Defogging foggy video image. Select ON/OFF.

(6) FLICKERLESS

Occurs flicker correction function in the Power frequency is different areas(50Hz/60Hz)

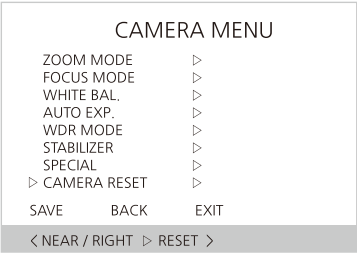
(7) GAMMA LEVEL

Set Gamma level.(0~3)

※ Set value depends upon the camera models.



1.8 CAMERA RESET



Make initialize the setting value which is set in CAMERA MENU.

2. CAMERA SPECIFICATION

2. 1 20x Camera

Image Sensor	1/2.8" Sony CMOS Sensor
Total Pixels	1945 (H) x 1109 (V) = 2.16M pixels
Active pixels	1937 (H) x 1097 (V) = 2.12M pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1080p/60(50)fps, 1080p/30(25)fps, 720p/60(50)fps, 720p/30(25)fps
	Analog : 700TVL
Min. illumination	Color(1/30s, 78dB) : 0.01 lux , BW(1/30s, 78dB) : 0.001lux
	Color DSS(1/1s, 78dB) : 0.001 lux , BW DSS(1/1s, 78dB) : 0.0001 lux
Video Output	HD : Digital(LVDS)
	Analog SD : VBS
S/N Ratio	more than 50dB (AGC off)
Lens type	20x Day & Night Zoom Lens
Zoom Ratio	Optical 20x, Digital 32x Zoom
Focal Length	f = 5.2 mm ~ 104 mm
Aperture Ratio	F1.5 (wide) ~ F3.5 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.5 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/60,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x / 8x / 16x / 32x (/64x : 60 or 50 fps mode only)
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	AUTO / One Push / Manual / Indoor / Outdoor
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1080p/30(25)fps / 1080p/60(50)fps / 720p/30(25)fps / 720p/60(50)fps

* Design and specifications are subject to change without notice.

2.2 30x Camera

Image Sensor	1/2.86" Panasonic CMOS Sensor
Total Pixels	1956 (H) x 1266 (V) = 2.48M Pixels
Active pixels	1944 (H) x 1092 (V) = 2.12M Pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1080p/60(50)fps, 1080p/30(25)fps, 720p/60(50)fps, 720p/30(25)fps
	Analog : 700TVL
Min. illumination	Color(1/30s) : 0.5 lux , BW(1/30s) : 0.1lux
	Color DSS(1/7.5s) : 0.125 lux , BW DSS(1/7.5s) : 0.025 lux
Video Output	HD : Digital(LVDS)
	Analog SD : VBS
S/N Ratio	more than 50dB (AGC off)
Lens type	30x Day & Night Zoom Lens
Zoom Ratio	Optical 30x, Digital 32x Zoom
Focal Length	f = 4.3 mm ~ 129.0 mm
Aperture Ratio	F1.6 (wide) ~ F5.0 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.0 / 3.0 / 6.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/30,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x (/ 8x : 60 or 50 fps mode only)
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	AUTO / One Push / Manual / Indoor / Outdoor
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1080p/30(25)fps / 1080p/60(50)fps / 720p/30(25)fps / 720p/60(50)fps

* Design and specifications are subject to change without notice.

Image Sensor	1/1.9" Sony CMOS Sensor
Total Pixels	1,952(H) x 1,241(V) = 2.42M Pixels
Active pixels	1,937(H) x 1,097(V) = 2.12M Pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1080p/30(25)fps, 1080p/60(50)fps(Optional), 720p/30(25)fps, 720p/60(50)fps Analog : 700TVL
Min. illumination	Color(1/30s) : 0.15 lux , BW(1/30s) : 0.01 lux Color DSS(1/7.5s) : 0.0375 lux , BW DSS(1/7.5s) : 0.002 lux
Video Output	HD : Digital(LVDS) Analog SD : VBS(without WDR)
S/N Ratio	more than 50dB (AGC off)
Lens type	30x Day & Night Zoom Lens
Zoom Ratio	Optical 30x, Digital 32x Zoom
Focal Length	f = 6.0 mm ~ 180.0 mm
Aperture Ratio	F1.5 (wide) ~ F4.3 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/30,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x (/ 8x : 60 or 50 fps mode only)
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	AUTO / One Push / Manual / Indoor / Outdoor
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1080p/30(25)fps / 1080p/60(50)fps(Optional) / 720p/30(25)fps / 720p/60(50)fps

* Design and specifications are subject to change without notice.

Image Sensor	1/2" Sony CMOS Sensor
Total Pixels	1,952(H) x 1,113(V) = 2.17M pixels
Active pixels	1,937(H) x 1,097(V) = 2.12M pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1080p/30(25)fps, 1080p/60(50)fps(Optional), 720p/30(25)fps, 720p/60(50)fps
	Analog : 700TVL
Min. illumination	Color(1/30s, 77.7dB) : 0.01 lux , BW(1/30s, 77.7dB) : 0.002lux
	Color DSS(1/1s, 77.7dB) : 0.001 lux , BW DSS(1/1s, 77.7dB) : 0.0002 lux
Video Output	HD : Digital(LVDS)
	Analog SD : VBS
S/N Ratio	more than 50dB (AGC off)
Lens type	30x Day & Night Zoom Lens
Zoom Ratio	Optical 30x, Digital 32x Zoom
Focal Length	f = 6.0 mm ~ 180.0 mm
Aperture Ratio	F1.5 (wide) ~ F4.8 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/60,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x / 8x / 16x / 32x (/64x : 60 or 50 fps mode only)
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	Auto / One Push / Manual / Indoor / Outdoor / Auto-Ext
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	Digital : 1080p/30(25)fps, 1080p/60(50)fps(Optional), 720p/30(25)fps, 720p/60(50)fps

* Design and specifications are subject to change without notice.

Image Sensor	1/1.8" Sony CMOS Sensor
Total Pixels	3,096(H) x 2,094(V) = 6.48M pixels
Active pixels	3,089(H) x 1,744(V) = 5.39M pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1440p 30(25)fps(Optional), 1080p 30(25)fps, 720p 30(25)fps
	Analog : 700TVL
Min. illumination	Color(1/30s, 51dB) : 0.2 lux , BW(1/30s, 51dB) : 0.05lux
	Color DSS(1/1s, 51dB) : 0.02 lux , BW DSS(1/1s, 51dB) : 0.005 lux
Video Output	HD : Digital(LVDS)
	Analog : CVBS
S/N Ratio	more than 50dB (AGC off)
Lens type	30x Day & Night Zoom Lens
Zoom Ratio	Optical 30x, Digital 32x Zoom
Focal Length	f = 6.0 mm ~ 180.0 mm
Aperture Ratio	F1.5 (wide) ~ F4.8 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/30,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x / 8x / 16x / 32x
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	Auto / One Push / Manual / Indoor / Outdoor / Auto-Ext
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1440p30(25)fps(Optional) / 1080p30(25)fps / 720p30(25)fps

* Design and specifications are subject to change without notice.

2. 3 36x Camera

Image Sensor	1/1.9" Sony CMOS Sensor
Total Pixels	1,952(H) x 1,241(V) = 2.42M Pixels
Active pixels	1,937(H) x 1,097(V) = 2.12M Pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1080p/30(25)fps, 1080p/60(50)fps(Optional), 720p/30(25)fps, 720p/60(50)fps Analog : 700TVL
Min. illumination	Color(1/30s) : 0.15 lux , BW(1/30s) : 0.01 lux Color DSS(1/7.5s) : 0.0375 lux , BW DSS(1/7.5s) : 0.002 lux
Video Output	HD : Digital(LVDS) Analog SD : VBS(without WDR)
S/N Ratio	more than 50dB (AGC off)
Lens type	36x Day & Night Zoom Lens
Zoom Ratio	Optical 36x, Digital 32x Zoom
Focal Length	f = 6.0 mm ~ 216.0 mm
Aperture Ratio	F1.5 (wide) ~ F4.8 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push / 1 ~ 10Day
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/30,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x (/ 8x : 60 or 50 fps mode only)
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	AUTO / One Push / Manual / Indoor / Outdoor
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1080p/30(25)fps / 1080p/60(50)fps(Optional) / 720p/30(25)fps / 720p/60(50)fps

* Design and specifications are subject to change without notice.

Image Sensor	1/2" Sony CMOS Sensor
Total Pixels	1,952(H) x 1,113(V) = 2.17M Pixels
Active pixels	1,937(H) x 1,097(V) = 2.12M Pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1080p/30(25)fps, 1080p/60(50)fps(Optional), 720p/30(25)fps, 720p/60(50)fps Analog : 700TVL
Min. illumination	Color(1/30s) : 0.01 lux , BW(1/30s) : 0.002 lux Color DSS(1/1s) : 0.001 lux , BW DSS(1/1s) : 0.0002 lux
Video Output	HD : Digital(LVDS) Analog SD : VBS
S/N Ratio	more than 50dB (AGC off)
Lens type	36x Day & Night Zoom Lens
Zoom Ratio	Optical 36x, Digital 32x Zoom
Focal Length	f = 6.0 mm ~ 216.0 mm
Aperture Ratio	F1.5 (wide) ~ F4.8 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/60,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x / 8x / 16x / 32x (/64x : 60 or 50 fps mode only)
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	Auto / One Push / Manual / Indoor / Outdoor / Auto-Ext
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1080p/30(25)fps / 1080p/60(50)fps(Optional) / 720p/30(25)fps / 720p/60(50)fps

* Design and specifications are subject to change without notice.

Image Sensor	1/1.8" Sony CMOS Sensor
Total Pixels	3,096(H) x 2,094(V) = 6.48M pixels
Active pixels	3,089(H) x 1,744(V) = 5.39M pixels
Scanning system	Progressive Scan
Sync. System	Internal
Resolution	Digital : 1440p 30(25)fps(Optional), 1080p 30(25)fps, 720p 30(25)fps
	Analog : 700TVL
Min. illumination	Color(1/30s, 51dB) : 0.2 lux , BW(1/30s, 51dB) : 0.05lux
	Color DSS(1/1s, 51dB) : 0.02 lux , BW DSS(1/1s, 51dB) : 0.005 lux
Video Output	HD : Digital(LVDS)
	Analog : CVBS
S/N Ratio	more than 50dB (AGC off)
Lens type	36x Day & Night Zoom Lens
Zoom Ratio	Optical 36x, Digital 32x Zoom
Focal Length	f = 6.0 mm ~ 216.0 mm
Aperture Ratio	F1.5 (wide) ~ F4.8 (tele)
Focus	Mode / Distance / AF Mode
Mode	Auto / One Push / Manual
Distance	0.1 / 1.5 / 3.0 / 5.0 / 10.0 m / Over
Lens Refresh	One Push
E.Zoom	Off / MAX 2x ~ 32x
Exposure	AUTO / IRIS.P / SHUT.P / MANUAL
Shutter Speed	1/30(25) ~ 1/30,000 sec
Iris	0 ~ 20
Digital Slow Shutter (DSS)	Off / 2x / 4x / 8x / 16x / 32x
WDR/BLC	OFF / WDR / BLC
Day&Night	Auto / Day / Night
White Balance	Auto / One Push / Manual / Indoor / Outdoor / Auto-Ext
DNR	Auto / Off / Low / Middle / High
System	NTSC / PAL
HD Format	1440p30(25)fps(Optional) / 1080p30(25)fps / 720p30(25)fps

* Design and specifications are subject to change without notice.