CE FC

360X AUTO FOCUS
ZOOM COLOUR CAMERA
OPERATION MANUAL

About this manual
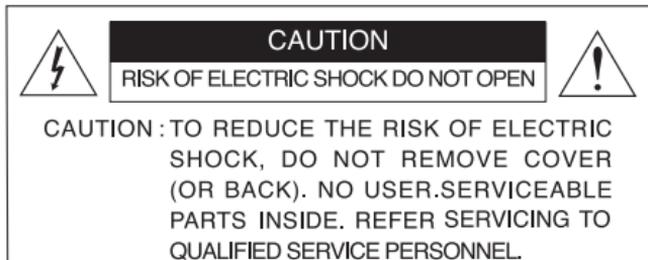Before installing and using the camera, please read this manual carefully. Be sure to keep it handy for later reference.

CONTENTS

(*) CAUTION : The WDR is an Optional function

1.Cautions

INFORMATION

This equipment has been tested and found to comply with limits for a Class B 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 their own expense.

WARNING

Any Changes or modifications in construction of this devices which are not expressly approved by the party responsible for compliance could void the authority to operate the equipment.

CAUTION : To prevent electric shock and risk of fire hazards:
- Do NOT use power sources except for that specified.
- Do NOT expose this appliance to rain or moisture.

1.Cautions

⚠ NOTE

1. A regulated DC12V 500mA power supply is recommended for use with this camera for the best picture and the most stable operation.
   **An unregulated power supply can cause damage to the camera.
   When unregulated power supply is applied, product warranty will be out of subject.**
2. It is recommended that the camera is used with a monitor that has a CCTV quality 75 video impedance level.
   If your monitor is switched to high impedance then please adjust accordingly.
3. Do not attempt to disassemble the camera to gain access to the internal components. Refer servicing to your dealer.
4. Never face the camera towards the sun or any bright or reflective light, which may cause smear on the picture and possible damage to the CCD.
5. **Do not remove the serial sticker for the warranty service.**

2.Precautions

Do not operate under extreme temperature conditions.
Using the camera in temperatures exceeding 50˚C or below -10˚C may
lower image quality or cause the camera to malfunction.

Do not operate in high humidity environments.
Using the camera in places with high humidity may lessen picture quality
because of moisture on the lens.

Do not operate under unsteady lighting.
The camera will not work properly in places with great changes in
illumination intensity, such as fluorescent lamps.

Do not attempt to disassemble the camera.

Do not drop the camera or subject it to physical shock.
It may damage the camera if dropped or subjected to strong impact.

Do not exposed to an intense light source such as direct sunlight
It may damage the CCD.

Do not exposed the camera to rain or other types of liquids.
It may damage the camera.

Do not exposed the camera to radioactivity.
It may damage the CCD.

⚠ NOTE

• Exposure to a spotlight or an object emitting strong light may cause smear or
  blooming.
• Ensure that the power source complies with normal specifications before supplying it
  to the camera.

3.Features

1/4" Sony Double Scan Exview HAD CCD
1/4" Sony Double Scan EXview HAD CCD with 380,000(NTSC) or 440,000(PAL) effective pixels, delivers an excellent signal-to-noise ratio, exceptional low-light performance, enhanced FOV, and high image quality. The minimum illumination required is 0.1 Lux(Night Mode, DSS OFF)

36x Optical Zoom
The Built-in 36x Optical zoom lens is a highly durable component. It features Auto Focus, Auto Iris and Zoom functions.

SS-3 DSP Chip
SS-3 features a powerful SONY's DSP that can efficiently remove image noise, producing crisp and clear images even under low lighting conditions.

High Resolution
Featuring 550TV lines horizontal resolution in color mode and 570TV lines horizontal resolution in BW mode.

Day & Night
The camera automatically determines whether it is night time or day time, selecting operating mode automatically. The camera operates in color mode during day light conditions and BW mode in night conditions for clearer identification.

Privacy Masking
Privacy Zone masking protects private objects and areas. The camera sets up to 15 places per screen simultaneously.

Multi-Protocol
Adopts various communications protocol, such as VISCA(SONY), LG, Pelco-D/P compatible. It enables the camera to be compatible with other equipment.

4. Components and Accessories

Package

Operation Manual	36x Zoom Camera
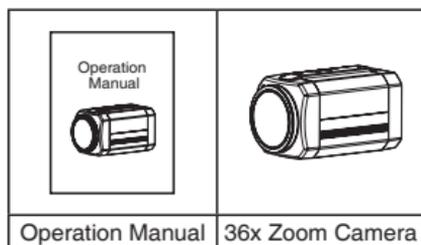
Tripod Mounting Hole

Install the camera on an optional tripod.
The tripod must be equipped with screws with
specifications shown on the right.

L

1/4"-20 UNC (20 THREAD)
L:4.5mm±0.2mm(ISO standard),
or 0.197" (ASA standard)

TRIPOD MOUNTING HOLE
(1/4" - 20 UNC)
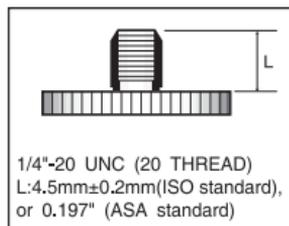
Tripod Mounting

Tripod Mounting bracket is assembled
to the top and buttom of the camera.

TRIPOD MOUNTING HOLE
(1/4" - 20 UNC)

5. Dimensions

67

73

119.5
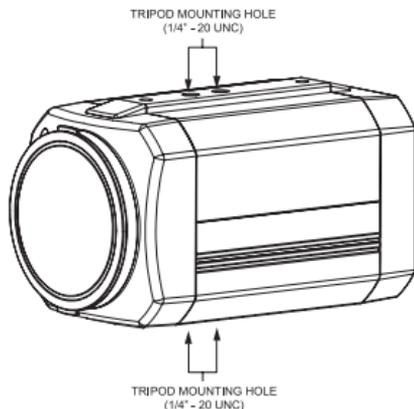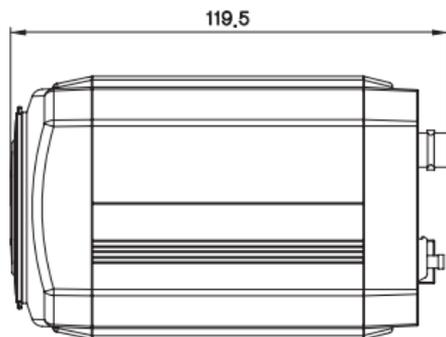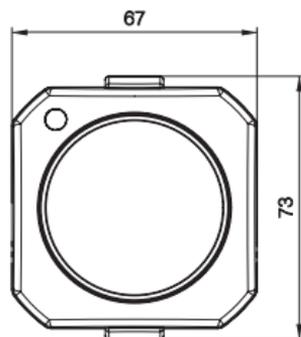
6.Overview

Rear View
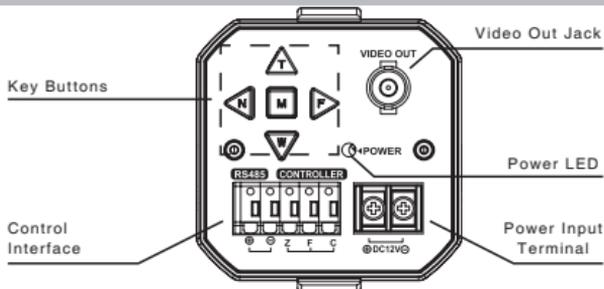
Key Buttons
• Following buttons control zoom, focus, and auto focus functions.
  W(WIDE) button : To widen the view. (ZOOM OUT)
  T(TELE) button : To close in on a far object. (ZOOM IN)
  N(NEAR) button : To see a near object clearly.
  F(FAR) button : To see a far object clearly.
• Pressing the M(MENU) button prompts the main setup menu.
• Setup menu can be navigated using these buttons.
  MENU(M) button : To access the main setup menu.
  UP(T) button : To move the arrow indicator to up.
  DOWN(W) button : To move the arrow indicator to down.
  LEFT(N) button : To change date to down.
  RIGHT(F) button : To change date to up.

Control Interface
• Used to connect the remote control equipment.
  Includes the RS-485 communication pin.
  Zoom and focus functions can be controlled by using external signals.

Power LED
• Illuminates when power is supplied.

Video Output Jack
• Used to connect an external video monitor in jack.

Power Input Terminal
• Power supply terminal(DC12V± 10%)

7.Installation

Connecting to Monitor

• Connect Video Out Jack to the monitor's Video In Jack as shown below.
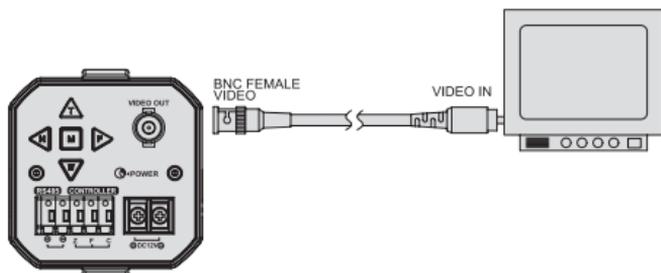
• Connection methods may vary depending on the video equipment. Please refer to the model specific instruction manual.

• Connect cables with the unit powered down.
  Set the 75Ω / Hi - Z selection switch as shown below if you have an intermediate device.
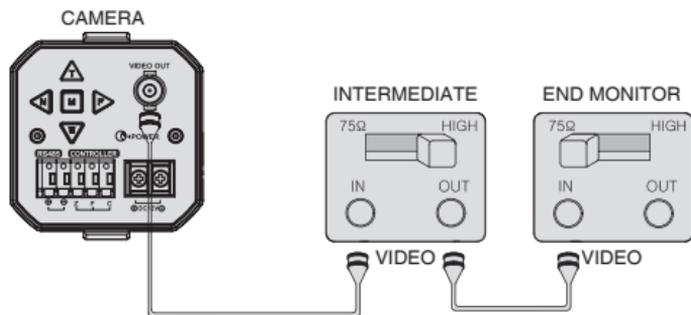
7.Installation

Connecting to Power

Connect the power cable to the camera's power in as shown in the figure below

DC 12V REGULATED
POWER SUPPLY
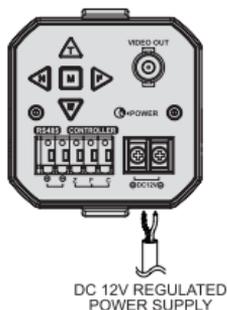
Resistance of copper wire [at 20℃ (68˚F)]

Copper wire size (AWG)	#24 (0.22㎟)	#22 (0.33㎟)	#20 (0.52㎟)	#18 (0.83㎟)
Resistance(Ω/m)	0.078	0.050	0.030	0.018
Voltage Drop(V/m)	0.028	0.018	0.011	0.006

• As the voltage drop according to the length of the cable in the above table, a camera may malfunction if there is an excessively long cable run.

• Voltage drops in the above table are variable according to types of cable manufacturer.

⚠ NOTE
• Connect the power once the installation is complete.
• When connecting to the power source, make sure the polarity of the power adapter is correct.
• Use a DC12V/500mA power source for the camera.

7.Installation

Control Interfaces(Communication Control Connector)

The camera can be controlled by using external controllers like as the keyboard controller.(RS-485 Communication)

Connecting PC or DVR (Serial Port)

NAME

1. Frame GND
2. RD
3. TD
4. DTR
5. Signal GND
6. DSR
7. RTS
8. CTS
9. RI
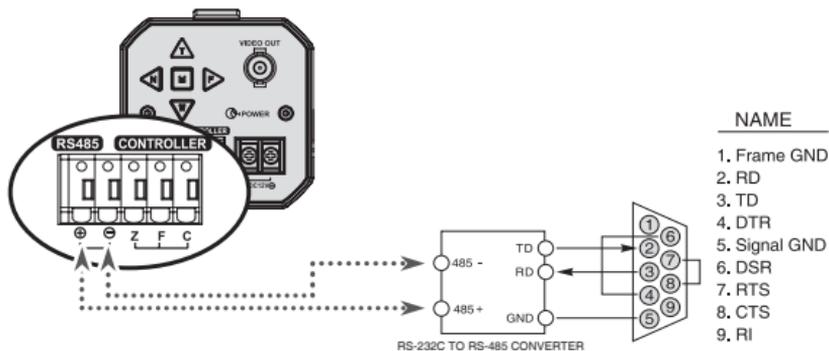
Connecting to RS-485 Controller
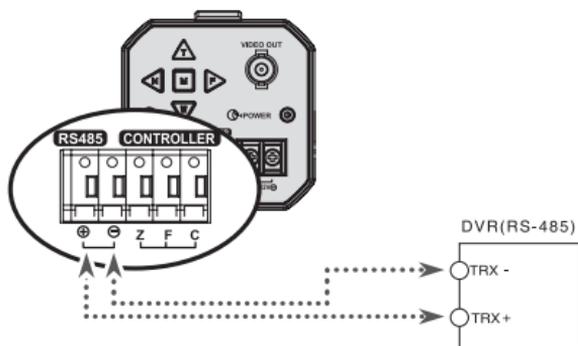
7.Installation

Connecting to External Controller
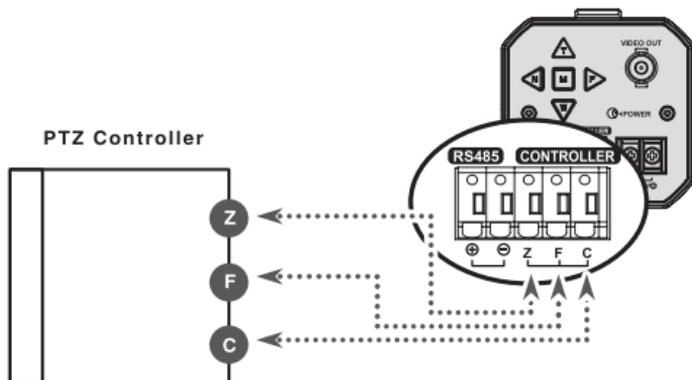
PTZ Controller

Controller Function Table

FUNC.	FOCUS	ZOOM
TELE	COM	+6V
WIDE	COM	-6V
NEAR	+6V	COM
FAR	-6V	COM
MENU	+6V	+6V
STOP	COM	COM

7.Installation

External D&N Input / Output
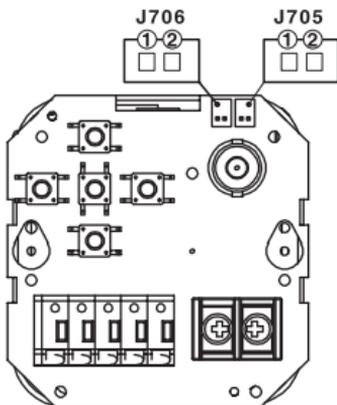
• It can be switched to DAY mode or NIGHT mode by receiving the signal from external light sensor or IR LED LAMP.
 when D&N Mode is set " EXTERNAL" on the OSD menu of the Camera.

High(+5V) : NIGHT
LOW(GND) : DAY

J705	①	Day/Night EXT
	②	GND
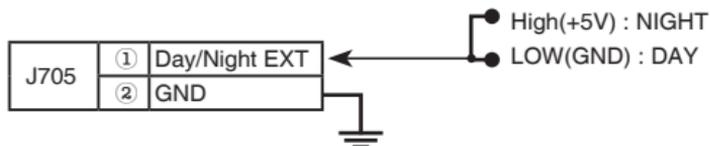
• It can be sent signal to other equipment like as IR LED lamp. In this case, IR LED lamp can turn on using this signal.

High(+3.3V) : IR LED ON(NIGHT)
LOW(GND) : IR LED OFF(DAY)

J706	①	Day/Night Out
	②	GND
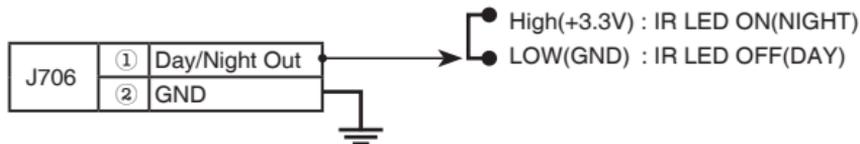
• This feature is available while using without case model.

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8. Operating Camera

OSD Menu Configuration

```
                    SETUP

          1.LENS                    [↵]
          2.EXPOSURE                [↵]
          3.WHITE BALANCE           [↵]
          4.WDR/BLC                 [↵]
          5.DAY&NIGHT               [↵]
          6.IMAGE                   [↵]
          7.SPECIAL                 [↵]
          8.FACTORY DEFAULT
          9.EXIT
```

```
                    LENS


          FOCUS MODE          ··· AUTO
          FOCUS LIMIT         ··· 50CM
          ZOOM START          ··· x1
          ZOOM STOP           ··· x360
          ZOOM SPEED          ··· 15
          E-ZOOM              ··· ON
          INITIAL
          RETURN
```

```
                  EXPOSURE


          AE MODE             ··· SHUT FIX
          BRIGHTNESS          ··· 8
          FLICKERLESS         ··· OFF
          SHUTTER             ··· 1/60
          AGC LEVEL           ··· AUTO
          MAX AGC GAIN        ··· 29dB
          MAX FIELDS          ··· 128
          INITIAL
          RETURN
```

```
                WHITE BALANCE


          WB MODE             ··· MANUAL
          WB CONTROL          ··· -
          RED CONT            ··· 30
          BLUE CONT           ··· 50
          INITIAL
          RETURN
```

Without WDR Model

```
                WDR/BLC

WDR MODE         ··· ON
WDR LEVEL        ··· 08
BLC MODE         ··· OFF
BLC ZONE         ··· CENTER
BLC LEVEL        ··· 04
INITIAL
RETURN
```

```
                  BLC

BLC MODE         ··· OFF
BLC ZONE         ··· CENTER
BLC LEVEL        ··· 04
INITIAL
RETURN
```

```
             DAY & NIGHT

D&N MODE         ··· AUTO
DETECT MODE      ··· SENSOR
DWELL TIME       ··· 5 SEC
D->N LEVEL       ··· 8 LUX
N->D LEVEL       ··· 100 LUX
BURST(NIGHT)     ··· OFF
INITIAL
RETURN
```

```
                 TITLE
                   ↓
               [M]select
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789ÁÒÜÉÆåßÕåéíñóúß≋
SPACE>>    <<BACK    MORE>>


LOCATION              ··· [↵ ]
RETURN
```

```
[TITLE LOCATION]      [M] [↵ ]

             CAM TITLE


       [T]↑ [W]↓ [N]← [F]→
```

```
                 IMAGE

ROTATE           ··· NORMAL
FREEZE           ··· OFF
SHARPNESS        ··· 10
NEGATIVE         ··· OFF
INITIAL
RETURN
```

```
                PRIVACY

ZONE NUM.        ··· 3
CONTROL          ··· MASK
H START          ··· 10
V START          ··· 30
H WIDTH          ··· 200
V HEIGHT         ··· 110
COLOR            ··· BLACK
INITIAL
RETURN
```

```
                DISPLAY

CAM ID           ··· ON
CAM TITLE        ··· ON
CAM STATE        ··· ON
ZOOM RATIO       ··· ON
MOTION DETECT    ··· OFF
POWER ON MSG.    ··· ON
STANDBY          ··· ON
INITIAL
RETURN
```

```
                SPECIAL

CAM ID           ··· 001
LANGUAGE         ··· ENG
BAUDRATE         ··· 9600
TITLE            ··· [↵ ]
PRIVAC           ··· [↵ ]
DISPLAY          ··· [↵ ]
MOTION DETECT    ··· [↵ ]
INITIAL
RETURN
```

```
            MOTION DETECT

ZONE NAME        ··· WINDOW0
CONTROL          ··· ON
H START          ··· 4
V START          ··· 2
H WIDTH          ··· 4
V HEIGHT         ··· 4
SENSITIVITY      ··· 8
ALARM            ··· OSD&COM
INITIAL
RETURN
```

8.Operating Camera

On Screen Display
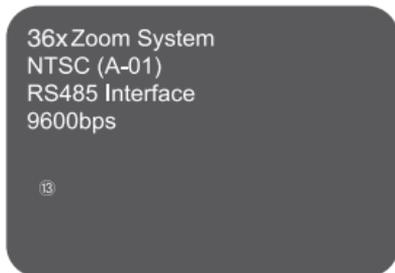
NO		Function	Format	Description
CAMERA STATE	①	Focus	ND	Focus Auto Mode
			☞	Focus Manual Mode or Focus Push Mode
			A • ☞	In case of Focus Push Mode, while pushing the Pocus push Auto Key, focus operates as mode temporary
	②	Rotate	ND	Normal Image
			↔	Horizontal Rotate
			↕	Vertical Rotate
			⊕	Horizontal&Vertical(180°) Rotate
	③	Backlight / WDR	ND	Backlight OFF & WDR OFF
			🖼	Backlight ON & WDR OFF
			WDR	Backlight OFF & WDR ON

CAUTION : The WDR is an Option function

8.Operating Camera

CAMERA STATE	④	WB	ND	Factory default
			ATW	Auto Trace WB Mode
			PwB	Push Auto Mode
			IwB	Indoor WB Mode
			OwB	Outdoor WB Mode
			MwB	Manual WB Mode
			AwB	Wide Range Trace Mode
	⑤	Shutter Speed	ND	Normal Shutter (Automatic Shutter)
			1/1 ~ 1/ 100000	Manual Shutter High Shutter 1/50(60) ~1/100000 Slow Shutter 1/1 ~ 1/25(30)
			F̅L̅	Flicker Free Mode (1/120(100))
	⑥	Freeze	ND	Normal (live) Image
			F̅Z̅	Still Image
	⑦	Night shot	ND	Day State (ICR OFF)
			☼	Night Shot State (Removed the IR cut filter, ICR ON)
	⑧	Motion Detect Message	ND	Normal Image
			M̅D̅	Motion is detected
⑨		Title	**********	Title (Max. 10 characters), This position is adjustable (default : Left bottom side)
⑩		Zoom Ratio	x1~Dx360	Optical(x1 ~ x36), Digital(Dx36~Dx360)
⑪		Camera ID	ID:000 ~ ID:255	Camera Identification Number
⑫		Standby	STANDBY	Stand-by Mode
⑬		Power On Msg	-	Informs the camera system settings. It is displayed for 2 seconds after power on.

8.Operating Camera

Menu Setup

Use the five buttons on back of the camera.

Function Setup Key
TELE(UP) BUTTON
NEAR(LEFT) BUTTON
FAR(RIGHT) BUTTON
MENU BUTTON
WIDE(DOWN) BUTTON
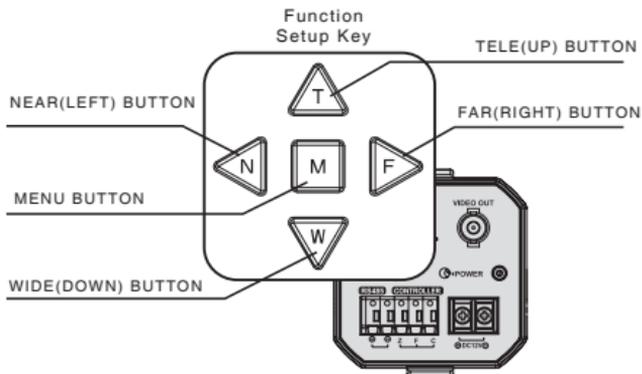
1. Press the MENU button to access the main setup mode.

• Main setup menu is displayed on the monitor screen.
• The Menu consists of the "Main-Menu" and "Sub-Menu"

NEAR/FAR ⟶

TELE/WIDE

SETUP

1.LENS   [ ]
2.EXPOSURE   [ ]
3.WHITE BALANCE   [ ]
4.WDR/BLC   [ ]
5.DAY&NIGH   [ ]
6.IMAGE   [ ]
7.SPECIAL   [ ]
8.FACTORY DEFAULT
9.EXIT
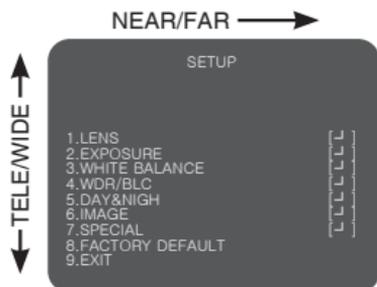
2. Select the desired feature using the TELE and WIDE button.

• Each pressing of the TELE or WIDE button moves the indicator to the next or previous feature.

8. Operating Camera

3. Select the desired feature using the TELE and WIDE button.

- The indicator moves up and down in the main menu feature.
- Move the arrow indicator to the desired feature.

```
                    SETUP



     1.LENS                    [ ]
     2.EXPOSURE                [ ]
     3.WHITE BALANCE           [ ]
     4.WDR/BLC                 [ ]
     5.DAY&NIGH                [ ]
     6.IMAGE                   [ ]
     7.SPECIAL                 [ ]
     8.FACTORY DEFAULT
     9.EXIT
```
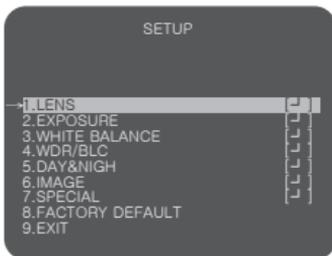
4. Change the status of the selected feature using the NEAR and FAR button

- Pressing the NEAR/FAR button, the sub-menu is displayed.
- Press the TELE/WIDE button to move up and down the sub-menu. category and set each category by pressing the NEAR/FAR button.
- When completed, move the arrow indicator to "RETURN" and press the NEAR/FAR button.

```
                    LENS



     FOCUS MODE          ⋯ AUTO
     FOCUS LIMIT         ⋯ 50CM
     ZOOM START          ⋯ X1
     ZOOM STOP           ⋯ X360
     ZOOM SPEED          ⋯ V~FAST
     E-ZOOM              ⋯ ON
     INITIAL
     RETURN
```
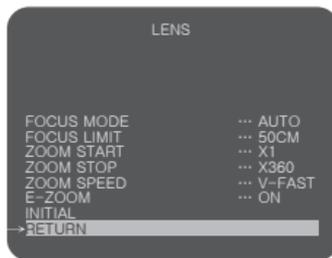
5. Press the MENU button at the main-menu or sub-menu screen to hide the menu.

- It does not apply when the MENU button is used for other uses.

6. FACTORY DEFAULT

- All menu will be initialized except for the Camera ID

8.Operating Camera

Sub-Menu : LENS

```
                    LENS


        FOCUS MODE        ··· AUTO
        FOCUS LIMIT       ··· 50CM
        ZOOM START        ··· X1
        ZOOM STOP         ··· X360
        ZOOM SPEED        ··· V–FAST
        E–ZOOM            ··· ON
        INITIAL
        RETURN
```
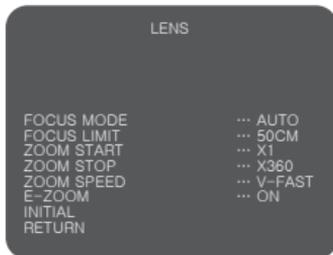
1. FOCUS MODE

- AUTO   : Focus is automatically adjusted with moving zoom.
- MANUAL : Focus can be manually adjusted, independent of moving zoom.

2. FOCUS LIMIT

- Minimum distance the camera can focus.
  ex) 50 cm: Subjects closer than 50 cm cannot be brought into focus.
- 1CM/10CM/50CM/1.5M/2M/3M/5M/10M/INF

3. ZOOM START

- Configure zoom start ratio.
- Can be set from x1 to x36.

4. ZOOM STOP

- Configure zoom stop ratio.
- Can be set from x1 to x360.

5. ZOOM SPEED

- Configure zoom tracing speed.
- V-FAST(4.2sec)/ FAST(4.6sec)/ NORMAL(5.0sec)/SLOW(7.5sec)

6. E-ZOOM

- Configure digital zoom function.
- ON   : Enable Digital Zoom
- OFF : Disable Digital Zoom

7. INITIAL

- Initializes the changed category in LENS menu.
- Press the NEAR/FAR button to confirm.

8.Operating Camera

Sub-Menu : EXPOSURE

```
                          EXPOSURE


            AE MODE              ··· SHUT FIX
            BRIGHTNESS           ··· 8
            FLICKERLESS          ··· OFF
            SHUTTER              ··· 1/60
            AGC LEVEL            ··· –
            MAX AGC GAIN         ··· MID
            MAX FIELDS           ··· 128
            INITIAL
            RETURN
```
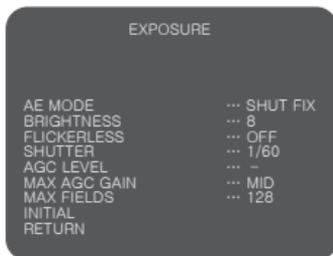
1. AE MODE

- AUTO   : Automatic mode. Exposure is controlled by Shutter, Iris & Gain.
- SHUT FIX : Shutter priority mode. Exposure is controlled by Iris & Gain.
- AGC FIX : Gain priority mode. Exposure is controlled by Shutter & Iris.
- MANUAL : Manual mode.

2. BRIGHTNESS

- Use this function to adjust image brightness.
- Can be adjusted from 0(dark) to 15 (Bright).

3. FLICKERLESS

- Flicker correction mode.
- -(WDR) : Now WDR ON State

4. SHUTTER

- Can be changed while in MANUAL and SHUT FIX mode.
- Shutter speed can be changed from 1/1 to 1/100,000s.
- Standard shutter speed : NTSC - 1/60. PAL - 1/ 50.
- -(WDR) : Now WDR ON State

8.Operating Camera

5. AGC LEVEL
- For brighter images, set to the desired value.
- Can be changed from OFF to 36dB while in AGC FIX and MANUAL mode.

6. AGC LEVEL
- Adjusts the maximum gain mode.
- OFF, LOW, MID, HIGH, SUPER

7. MAX FIELDS
- Adjusts the maximum accumulation fields.
- Can be changed from OFF to 128FLD.

8. INITIAL
- Initializes the changed category in EXPOSURE menu.
- Press the NEAR/FAR button to confirm.

Control table with AE mode

	Auto	Shutter Fix	AGC Fix	Manual
BRIGHTNESS	O	O	O	X
FLICKERLESS(*2)	O	O	O	O
SHUTTER(*2)	X	O	X	O
AGC LEVEL	X	X	O	O
AGC MAX GAIN	O	O(*1)	O	X
MAX FIELD	O	X	O	X

(*1)The AGC MAX GAIN will be write-protected if the shutter is slow shutter mode.

(*2) If WDR is ON, the flickerless and Shutter are write-protected

8.Operating Camera

Sub-Menu : WHITE BALANCE

```
                    WHITE BALANCE



WB MODE              ⋯ MANUAL
WB CONTROL           ⋯ –
RED CONT             ⋯ 30
BLUE CONT            ⋯ 50
INITIAL
RETURN
```
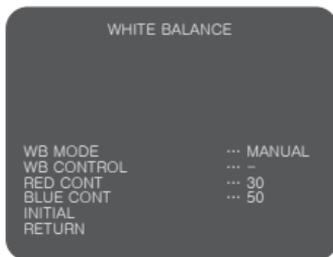
1. WB MODE
- • ATW   : When color temperature is 2400° K~10000 K°, select this mode.
- • INDOOR : Set color temperature to be 3200°K.
- • OUTDOOR : Set color temperature to be 5800°K.
- • PUSH   : Color will be automatically adjusted while the MENU
             button is pressed in the temporary automatic mode.
- • MANUAL : Can increase or decrease the red or blue value while monitoring
             the difference on the screen.
- • AWB   : The white balance is automatically adjusted in a specific
             environment.

2. WB CONTROL
- • Indicates the condition of each WB mode.
- • ' - ' no operation

3. RED CONT
- • Can be changed in MANUAL mode only.
- • Can be set from 0 to 255.

4. BLUE CONT
- • Can be changed in MANUAL mode only.
- • Can be set from 0 to 255.

5. INITIAL
- • Initializes the changed category in WHITE BALANCE menu.
- • Press the NEAR/FAR button to confirm.

8. Operating Camera

Sub-Menu : WDR/ BLC


```
              WDR/BLC
WDR MODE          ··· ON
WDR LEVEL         ··· 8
BLC MODE          ··· OFF
BLC ZONE          ··· CENTER
BLC LEVEL         ··· 4
INITIAL
RETURN
```

```
              BLC
BLC MODE          ··· OFF
BLC ZONE          ··· CENTER
BLC LEVEL         ··· 4
INITIAL
RETURN
```
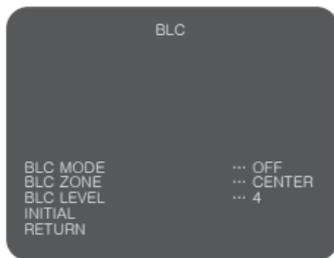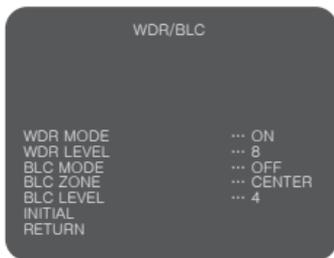
Without WDR Model

1. WDR MODE(*)
- OFF : Disable the Wide Dynamic Range function
- ON   : WDR Fixed mode.

2. WDR LEVEL(*)
- Can adjust the level(0~15)

3. BLC MODE
- Compensates for scenes with "BACKLIGHT"conditions.

4. BLC ZONE
- Sets backlight compensation weighting zone(BLC ON mode).
- Can be selected CENTER, TOP, BOTTOM, LEFT, RIGHT.

5. BLC LEVEL
- Sets backlight compensation weighting value(BLC ON mode).
- Can be adjusted from 0 to 15.

6. INITIAL
- Initializes the changed category in WDR/BLC menu.
- Press the NEAR/FAR button to confirm.

⚠ NOTE
- The BLC dose Not Work in WDR ON mode
- (*)The WDR is an Option function

8.Operating Camera

Sub-Menu : DAY & NIGHT

```
                    DAY & NIGHT


    D&N MODE              ··· AUTO
    DETECT MODE          ··· SENSOR
    DWELL TIME           ··· 1 SEC
    D→N LEVEL            ··· 1 Lux
    N→D LEVEL            ··· 10 Lux
    BURST(NIGHT)         ··· ON
    INITIAL
    RETURN
```
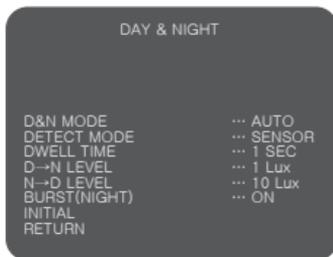
1. D&N MODE

- Select desired operation mode.
- COLOR : Day fix mode.
- BW : Night fix mode.
- AUTO : Automatically changes COLOR/BW mode according to illuminance.
- EXTERNAL : Changes COLOR/BW mode according to external input signal. B/W(HIGH, +5V) COLOR(LOW, GND)

2. DETECT MODE

- SENSOR : Detect lighting conditions by photo-sensor.
- VIDEO : Detect lighting conditions by video level.
- AUTO : Automatically detect lighting conditions by photo-sensor & video level.
  Sets up the level higher while installing into the outdoor housing.

3. DWELL TIME

- Sets conversion time of IR cut filter while in automatic mode.
- Can be adjusted from 0 sec to 10 sec.

4. D→N LEVEL

- Sets turnover level from COLOR to BW while in AUTO Mode.
- Can be adjusted from 1 Lux to 90 Lux.
- It can be adjusted under sets SENSOR mode.
  Sets up the level higher while installing into the outdoor housing.

8.Operating Camera

5. N→D LEVEL

• Sets turnover level from BW to COLOR while in AUTO Mode.
• Can be adjusted from 3 Lux to 100 Lux.
• It can be adjusted under sets SENSOR mode.

6. BURST(NIGHT)

• Select the burst signal ON/OFF when NIGHT(ICR ON) mode.

7. INITIAL

• Initializes the changed category in DAY & NIGHT menu.
• Press the NEAR/FAR button to confirm.

8.Operating Camera

Sub-Menu : IMAGE

```
                    IMAGE




ROTATE                  ··· NORMAL
FREEZE                  ··· OFF
SHARPNESS               ··· 10
NEGATIVE                ··· OFF
INITIAL
RETURN
```
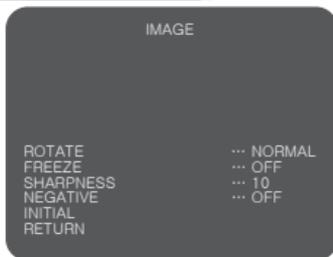
1. ROTATE

- NORMAL : Normal image.
- H   : Use this feature to horizontally inverse the screen.
- V   : Use this feature to vertically inverse the screen.
- H/V   : Use this feature to horizontally & vertically inverse the screen.

2. FREEZE

- Use this feature to freeze capture an image.

3. SHARPNESS

- Increasing this value sharpens object edges.
  Too high of a setting, produces noise and may obscure the image.
- Can be adjusted from 0(blunt image) to 15(sharp image).

4. NEGATIVE

- Select enables or disables negative image feature.
- Positive image is a normal image.

5. INITIAL

- Initializes the changed category in IMAGE menu.
- Press the NEAR/FAR button to confirm.

8. Operating Camera

Sub-Menu : SPECIAL

```
                        SPECIAL

        CAM ID              ··· 001
        LANGUAGE            ··· ENG
        BAUDRATE            ··· 9600
        TITLE               ··· [ ↵ ]
        PRIVACY             ··· [ ↵ ]
        DISPLAY             ··· [ ↵ ]
        MOTION DETECT       ··· [ ↵ ]
        INITIAL
        RETURN
```
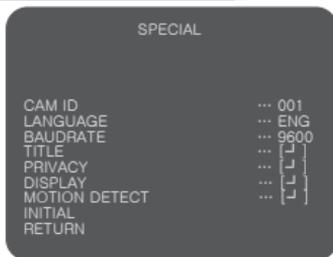
1. CAM ID

• Assign an identification number to the camera (0 to 255).

2. LANGUAGE

• Displays language can be selected from ENG/CHI/RUS/SPN/GER.
• Language for OSD(English, Chinese, Russian, Spanish, German)

3. BAUDRATE

• Configure baud rate from 2400/4800/9600/19200/38400 bps.
• Serial communication speed (bps)

4. TITLE

• Use this feature to designate a name for the camera, which will display on the monitor screen.

5. PRIVACY

• Use this feature to mask privacy area, which will display on the monitor screen.

6. DISPLAY

• Use this feature to display the Function-OSD on the screen.

7. MOTION DETECT

• Use this feature to alert signal upon detecting motion.

8. INITIAL

• Initializes the changed category in SPECIAL menu.
• Press the NEAR/FAR button to confirm.
• The CAM ID does not initialized.

8.Operating Camera

SPECIAL Sub-Menu : TITLE

Entry Field

Max.10 Character

```
                    TITLE
        ↓
CAM TITLE               [M] select
----------

ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789ÂÕÜÈÆâõûáéîñóúßæ
SPACE>>     <<BACK      MORE>>

LOCATION                ... [↵ ]
RETURN
```

1. Move the cursor to the character entry field using the NEAR or FAR button.

2. Use TELE, WIDE, NEAR, and FAR buttons to select a desired character.

3. Press the MENU button to confirm selection of the blinking character. Then the character is saved, and the cursor in the entry field moves to the next position.

4. You can choose up to 156 characters from the table.

```
ABCDEFGHIJKLMNOPQRSTUVWXYZ
abcdefghijklmnopqrstuvwxyz
0123456789ÂÕÜÈÆâõûáéîñóúßæ
SPACE>>     <<BACK      MORE>>
```

↕ [M]

```
АБВГДЕЁЖЗИЙКЛМНОПРСТУФХЦЧШ
ЩЪЫЬЭЮЯ①②③④⑤⑥⑦⑧⑨■▲▽◁►◀▲▼
%#&/!?[]()<>↕↑↓→←☞★.,:;'`•
SPACE>>     <<BACK      MORE>>
```

Symbols

↓	Selected position in the entry field
"A"~"æ"	Normal character
SPACE>>	Insert space " "character
<<BACK	Selected position moves to left in the entry field
MORE>>	Displays another characters.

8.Operating Camera

5. You can select on screen position of the TITLE.
- Move the cursor to "LOCATION" and press NEAR/FAR button.
- The TITLE is displayed on the top-left of the monitor screen.
- Select the position using the TELE/WIDE/NEAR/FAR button.
- Press the MENU button to confirm the position and exit this menu.

```
[TITLE LOCATION]              [M] ↵



              CAM TITLE



              [T]↑[W]↓[N]←[F]→
```
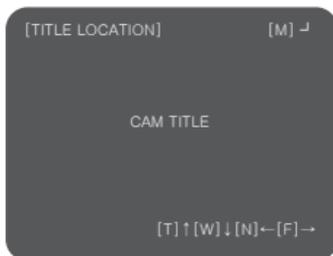
6. When completed, move the cursor to "RETURN" and press NEAR/FAR button.

8.Operating Camera

```
                        PRIVACY

ZONE NO                ··· 3
CONTROL                ··· MASK
H START                ··· 10
V START                ··· 30
H WIDTH                ··· 200
V HEIGHT               ··· 110
MASK COLOR             ··· BLACK
INITIAL
RETURN
```

1. ZONE NO
• Select the privacy mask zone number(1 ~ 15).

2. CONTROL
• Select desired masking effect.
• OFF: disable privacy zone as mask or mosaic.
• MASK: enable privacy zone as mask.
• MOSAIC : enable privacy zone as mosaic.
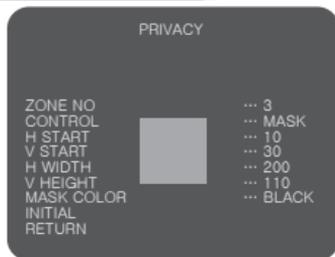
3. H START
• Set the horizontal starting point of privacy zone(0 ~ 180).

4. V START
• Set the vertical starting point of privacy zone(0 ~ 140).

5. H WIDTH
• Set the width of privacy zone(0 ~ 220).

6. V HEIGHT
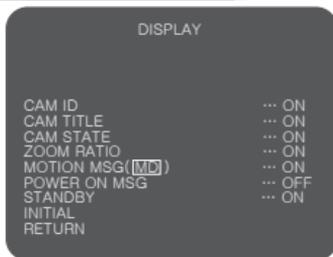• Set the height of privacy zone(0 ~ 180).

7. MASK COLOR
• Configure desired mask color(not mosaic).
• Up to eight different colors are supported.
  BLACK/BLUE/RED/GREEN/YELLOW/GRAY1/GRAY2/WHITE

8. INITIAL
• Initializes the changed category in PRIVACY menu.
• Press the NEAR/FAR button to confirm.

8. Operating Camera

SPECIAL Sub-Menu : DISPLAY

```
                    DISPLAY

CAM ID                          ··· ON
CAM TITLE                       ··· ON
CAM STATE                       ··· ON
ZOOM RATIO                      ··· ON
MOTION MSG(MD)                  ··· ON
POWER ON MSG                    ··· OFF
STANDBY                         ··· ON
INITIAL
RETURN
```

Use this feature to display the Function-OSD on the screen.

1. CAM ID   : Displays camera ID on ⑪ of the screen.
2. CAM TITLE   : Displays camera title on ⑨ of the screen.
3. CAM STATE   : Displays camera state on ① ~ ⑦ of the screen.
4. ZOOM RATIO   : Displays zoom ratio on ⑩ of the screen.
5. MOTION MSG(MD) : Displays MD character on ⑧ of the screen, when
                         the motion is detected.
6. STANDBY   : Displays system waiting message on ⑫ of the screen,
                         when power on.
7. POWER ON MSG   : Displays system information on ⑬ of the screen,
                         when power on.

8. INITIAL
   • Initializes the changed category in SPECIAL menu.
   • Press the NEAR/FAR button to confirm.

```
☞ ← 📷 PWB 1/10000 FZ ☼ MD       36x Zoom System
① ② ③ ④   ⑤      ⑥ ⑦ ⑧       NTSC (A-01)
                                  RS485 Interface
                                  9600bps
            STANDBY                ⑬
               ⑫


   ⑨          ⑩              ⑪
  TITLE      Dx360        ID : 255
```
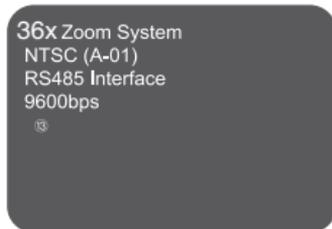
8. Operating Camera

SPECIAL Sub-Menu : MOTION DETECT

```
              MOTION DETECT

ZONE NAME        ··· WINDOW0
CONTROL          ··· ON
H START          ··· 16
H END            ··· 88
V START          ··· 9
V END            ··· 65
SENSITIVITY      ··· 8
ALARM            ··· OSD&SERIAL
INITIAL
RETURN
```
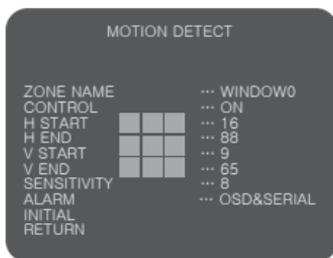
When there is a movement in the monitoring area, there will be an alarm, or the user will be informed through communications or " $\boxed{\text{MD}}$ " will display on the screen.

1. ZONE NAME
- Select the motion detection area number.
- Use the mask displayed on the screen to set positions.
- Can be selected WINDOW0~3 or BLOCK.

2. CONTROL
- Select enables or disables the motion detection feature.

3. H START
- Set the horizontal starting point for motion detection area.
- Select desired position from 11 to 178 in WINDOW0~3.
- Select desired position from 0 to 11 in BLOCK.

4. H END
- Set the horizontal terminating point for motion detection area.
- Select desired position from 11 to 178 in WINDOW0~3.
- Select desired position from 0 to 11 in BLOCK.

5. V START
- Set the vertical starting point for motion detection area.
- Select desired position from 6 to 128 in WINDOW0~3.
- Select desired position from 0 to 7 in BLOCK.

8.Operating Camera

6. V END
- Set the vertical starting point for motion detection area.
- Select desired position from 6 to 128 in WINDOW0~3.
- Select desired position from 0 to 7 in BLOCK.

7. SENSITIVITY
- Increase or decrease detection sensitivity value.
- Can be set from 1 (low response) to 15 (sensitive).

8. ALARM
- Select desired alert type.
- OSD   : The WINDOW or BLOCK will be displayed on the screen
                    when motion is detected.
- SERIAL   : Alert packet is transmitted via RS-485 when motion is
                    detected.
- OSD&SERIAL : Use OSD and SERIAL feature simultaneously.

9. INITIAL
- Initializes the changed category in MOTION DETECT menu.
- Press the NEAR/FAR button to confirm.

9.Communication Protocol

Pelco"D" Compatable Protocol Commands

Most widely used Commands

	BYTE1	BYTE2	BYTE3	BYTE4	BYTE5	BYTE6	BYTE7
TELE	0xFF	CamID	0x00	0x20	0x00	0x00	ChkSum
WIDE	0xFF	CamID	0x00	0x40	0x00	0x00	ChkSum
NEAR	0xFF	CamID	0x01	0x00	0x00	0x00	ChkSum
FAR	0xFF	CamID	0x00	0x80	0x00	0x00	ChkSum
STOP	0xFF	CamID	0x00	0x00	0x00	0x00	ChkSum
PWR ON	0xFF	CamID	0x88	0x00	0x00	0x00	ChkSum
PWR OFF	0xFF	CamID	0x08	0x00	0x00	0x00	ChkSum
MENU①	0xFF	CamID	0x00	0x23	0x00	0x5F	ChkSum
MENU②	0xFF	CamID	0x00	0x03	0x00	0x62	ChkSum
MENU③	0xFF	CamID	0x00	0x07	0x00	0x5F	ChkSum
MENU④	0xFF	CamID	0x00	0x07	0x00	0x60	ChkSum

※ MENU① : Pelco Keyboard Menu On/Off   [95(=0x5F) + Pattern]
※ MENU② : V/D Keyboard Menu On/Off   [Set Preset + 98(=0x62)]
※ MENU③④ : Another Menu On/Off   [Go To Preset + 95(=0x5F) or 96(=0x60]

※ CamID : 0x00 ~ 0xFF
※ ChkSum : The Check Sum is the 8 bit (modulo256) sum of the payload bytes
   (BYTE2-BYTE6) in the command.

9.Communication Protocol

Default Protocol Commands

Most widely used Commands

	BYTE1	BYTE2	BYTE3	BYTE4	BYTE5	BYTE6	BYTE7	BYTE8
TELE	0xF5	CamOPT	CamID	0x16	0x10	0x00	0x00	ChkSum
WIDE	0xF5	CamOPT	CamID	0x16	0x11	0x00	0x00	ChkSum
NEAR	0xF5	CamOPT	CamID	0x16	0x12	0x00	0x00	ChkSum
FAR	0xF5	CamOPT	CamID	0x16	0x13	0x00	0x00	ChkSum
MENU①	0xF5	CamOPT	CamID	0x16	0x03	0x00	0x00	ChkSum
STOP	0xF5	CamOPT	CamID	0x16	0x01	0x00	0x00	ChkSum
RESET	0xF5	CamOPT	CamID	0x11	0x00	0x00	0x00	ChkSum
PWR ON	0xF5	CamOPT	CamID	0x12	0x01	0x00	0x00	ChkSum
PWR OFF	0xF5	CamOPT	CamID	0x12	0x00	0x00	0x00	ChkSum
INIT	0xF5	CamOPT	CamID	0x17	0x00	0x00	0x00	ChkSum
MENU②	0xF5	CamOPT	CamID	0x19	0x01	0x00	0x00	ChkSum
MENU③	0xF5	CamOPT	CamID	0x19	0x00	0x00	0x00	ChkSum

※ MENU① : Menu On/Off
※ MENU② : Menu On
※ MENU③ : Menu Off

※ CamID : 0x00 ~ 0xFF
※ CamOPT : 0xF0 ~ 0xFF,   0xF0 (default, broadcasting), 0xF8(ID check),
※ ChkSum : The Check Sum is the 8 bit (modulo256) sum of the payload bytes
    (BYTE1-BYTE7) in the command.

⚠ NOTE

• The camera can be controlled by VISCA(SONY), LG, Pelco-P Compatable Protocol.
  For more detailed informations refer to their manuals.

10.Specifications

Model		WDR (Wide Dynamic Range) High RES. Zoom	
Signal System		NTSC	PAL
CCD	Image Sensor	1/4" Sony Double Scan Exview HAD 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)
Optics	Lens	36x, f=3.4~122.4mm(F1.6 ~F4.5)	
	Min. Object Distance	0.01m(W) ~ 1.5m(T)	
	Digital Zoom	1x ~ 10x	
	Angle Field of View	Horizontal : 57.8 degrees(Wide) to 1.7 degrees(Tele)	
Sync.	Scanning System	2:1 Interlace	
	Sync. System	Internal/Line-lock	
	Frequency	H:15.734 KHz V:59.94 Hz	H:15.625KHz V:50 Hz
Electrical	Horizontal Resolution	550 TV Lines	
	Camera Title	Off/On(Displayed 10 characters)	
	Camera ID	256 ID Selectable	
	Video Output	1.0Vp-p/75Ω	
	S/N Ratio	More than 50dB (AGC Off, DSS Off)	
	Min. Illumination	0.3 Lux : Color, 0.1Lux : BW (30 IRE @ Wide End, AGC Super, DSS Off)	
	Backlight Compensation	Off/On (Level Adjustable, Area Selectable)	
	WDR	Off / On (Level Adjustable)	
	Mechanical D&N	AUTO / COLOR / B/W / EXTERNAL	
	Gain Control	Off / Low / Mid / High / Super	
	White Balance	ATW / INDOOR / OUTDOOR / PUSH AUTO / MANUAL(R Gain, B Gain) / AWB	
	Electronic Shutter	1/60 ~ 1/100,000 sec	1/50 ~ 1/100,000 sec
	Digital Slow Shutter	Off, 2 ~ 128 Field	
	Flickerless	Off / On	
	Motion Detection	5 Zones	
	OSD	English / Chinese / Russian / Spanish / German	
	Focus	Auto / Manual	
	Zoom Tracking Speed	4.2 Sec : Wide to Tele	
	Lens Initialize	Support	
	Zoom/Focus Preset	512 internal / 128 external	
	Privacy Function	15 Zones	
	E-Flip	Off, Horizontal, Vertical, Horizontal / Vertical	
	Freeze	Off / On	
Communication	Serial Control	RS-485(2400bps, 4800bps, 9600bps, 19200bps, 38400bps Selectable)	
		KT&C, PELCO-D/P, VISCA, LG compatible	
	Voltage Control	External Control by Voltage (ZOOM, FOCUS)	
Power	Input Voltage	DC 12V(±10%)	
	Input Current	Max. 350mA	
Operating Temperature/Humidity		-10°C to +50°C	
Dimension		67mm X 73mm X 119.5mm	
Weight		Approx. 502g	

10.Specifications

Model		High RES. Zoom	
Signal System		NTSC	PAL
CCD	Image Sensor	1/4" Sony Super HAD CCD Ⅱ	
	Total Pixels	811(H) x 508(V)	795(H) x 596(V)
	Effective Pixels	768(H) x 494(V)	752(H) x 582(V)
Optics	Lens	36x, f=3.4~122.4mm(F1.6 ~F4.5)	
	Min. Object Distance	0.01m(W) ~ 1.5m(T)	
	Digital Zoom	1x ~ 10x	
	Angle Field of View	Horizontal : 57.8 degrees(Wide) to 1.7 degrees(Tele)	
Sync.	Scanning System	2:1 Interlace	
	Sync. System	Internal/Line-lock	
	Frequency	H:15.734 KHz V:59.94 Hz	H:15.625KHz V:50 Hz
Electrical	Horizontal Resolution	550 TV Lines	
	Camera Title	Off/On(Displayed 10 characters)	
	Camera ID	256 ID Selectable	
	Video Output	1.0Vp-p/75Ω	
	S/N Ratio	More than 50dB (AGC Off, DSS Off)	
	Min. Illumination	0.2 Lux : Color, 0.06Lux : BW (30 IRE @ Wide End, AGC Super, DSS Off)	
	Backlight Compensation	Off/On (Level Adjustable, Area Selectable)	
	Mechanical D&N	AUTO / COLOR / B/W / EXTERNAL	
	Gain Control	Off / Low / Mid / High / Super	
	White Balance	ATW / INDOOR / OUTDOOR / PUSH AUTO / MANUAL(R Gain, B Gain) / AWB	
	Electronic Shutter	1/60 ~ 1/100,000 sec	1/50 ~ 1/100,000 sec
	Digital Slow Shutter	Off, 2 ~ 128 Field	
	Flickerless	Off / On	
	Motion Detection	5 Zones	
	OSD	English / Chinese / Russian / Spanish / German	
	Focus	Auto / Manual	
	Zoom Tracking Speed	4.2 Sec : Wide to Tele	
	Lens Initialize	Support	
	Zoom/Focus Preset	512 internal / 128 external	
	Privacy Function	15 Zones	
	E-Flip	Off, Horizontal, Vertical, Horizontal / Vertical	
	Freeze	Off / On	
Communication	Serial Control	RS-485(2400bps, 4800bps, 9600bps, 19200bps, 38400bps Selectable)	
		KT&C, PELCO-D/P, VISCA, LG compatible	
	Voltage Control	External Control by Voltage (ZOOM, FOCUS)	
Power	Input Voltage	DC 12V(±10%)	
	Input Current	Max. 320mA	
Operating Temperature/Humidity		-10°C to +50°C	
Dimension		67mm X 73mm X 119.5mm	
Weight		Approx. 502g	