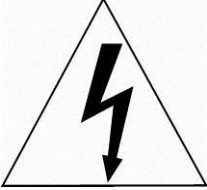**USER MANUAL**

VP DOME NETWORK CAMERA

Please read this manual thoroughly before use and keep it handy for future reference.

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

CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**

**CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK)
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.**

EXPLANATION OF GRAPHICAL SYMBOLS
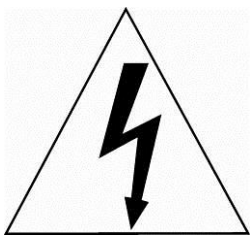
The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC INFORMATION: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CAUTION: Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This Class A digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

CE COMPLIANCE STATEMENT

WARNING
This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.

2. Keep these instructions.

3. Heed all warnings.

4. Follow all instructions.

5. Do not use this apparatus near water.

6. Clean only with dry cloth.

7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.

8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

11. Only use attachments/accessories specified by the manufacturer.

12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

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

14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

15. *CAUTION – THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.*

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

Table of Contents

1 Introduction

1.1 Features

- 1/2.9" SONY Exmor CMOS image sensor

- 2.8mm or 3.6mm fixed lens

- True D/N (Auto, Day, Night)

- IR LEDs

- HD-TVI, AHD, CVBS selectable

- Auto exposure control (1/50,000 ~ x30 second)

- White balance control (AWB, ATW, AWC, Indoor, Outdoor, Manual)

- BLC (Back Light Compensation)

- HSBLC (High Suppress Back Light Compensation)

- Digital WDR (Wide Dynamic Range)

- DNR (Digital Nosie Reduction)

- 4 Privacy areas

- Defog

- 12VDC for Camera

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

2 Installation and Configuration

2.1 Package Contents

The package contains the following.

- **Camera** **1**
- **User Manual (This Document)** **1**
- **Accessory Kit** **1**

2.2 Installing the Camera

Carefully remove the contents from the box.
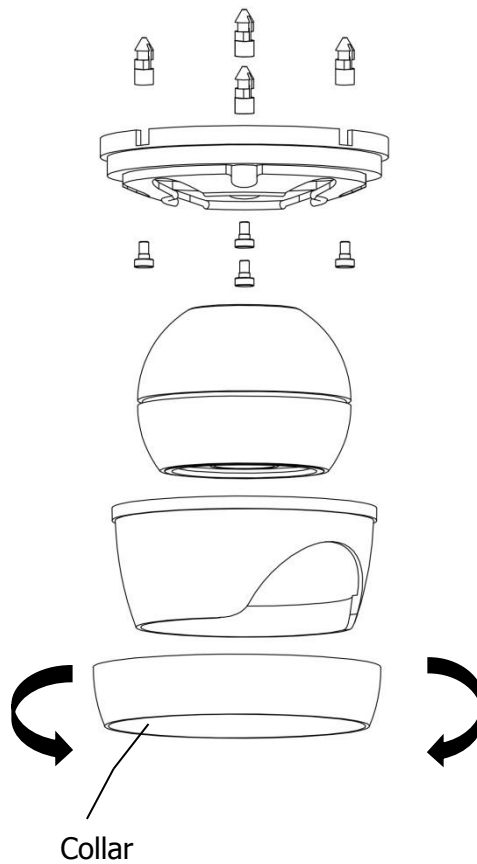
Collar

1) Loosen the collar

2) Fixed the base using screw and adjust camera position

3) Tighten the collar.

2.3 Connections
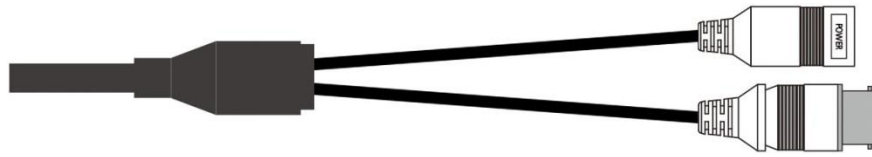
No.	Connector	Description
1	DC jack	Camera Power
2	BNC jack	Video Out

The camera must be installed by qualified service personnel in accordance with all local and federal electrical and building codes.

- **Connecting Video Output connector**

  Connect the video output (BNC) connector to the video input.

- **Connecting the Power**

  Connect power of 12VDC for the camera.

  When using a 12VDC adapter, connect the positive (+) pole to the '+' position and the negative (-) pole to the '-' position.

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

3 OSD Menu

3.1 OSD Menu Structure

```
   MAIN MENU

 LENS
 EXPOSURE
 BACKLIGHT
 WHITE BAL
 DAY&NIGHT
 NR
 SPECIAL
 ADJUST
 EXIT
```

```
    LENS

 MANUAL
```

```
  EXPOSURE

 SHUTTER
 AGC
 SENS-UP
 BRIGHTNESS
 D-WDR
 DEFOG
 RETURN
```

```
  BACKLIGHT

 OFF
 BLC↵
 HSBLC↵
```

```
  WHITE BAL

 AWB
 ATW
 AWC→SET↵
 INDOOR
 OUTDOOR
 MANAUL↵
```

```
  DAY&NIGHT

 EXT↵
 AUTO↵
 COLOR
 B&W↵
```

```
    NR

 2DNR
 3DNR
 RETURN
```

```
  SPECIAL

 CAM TITLE
 D-EFFECT
 MOTION
 PRIVACY
 LANGUAGE
 DEFECT
 RS485
 RETURN
```

```
   ADJUST

 SHARPNESS
 MONITOR
 LSC
 VIDEO.OUT
 RETURN
```

```
    EXIT

 SAVE&END↵
 RESET↵
 NOT SAVE↵
```

Note. OSD menu can be controlled by coaxial communication (UTC).

3.2 Lens

MANUAL: Select the lens Iris type. This camera is fixed to Manual Iris.

3.3 Exposure

```
        MAIN MENU                           EXPOSURE                            SENS-UP

  LENS           MANUAL                                            SENS-UP        x4
▸ EXPOSURE       ↵              SHUTTER       AUTO                 RETURN         RET↵
  BACKLIGHT      OFF            AGC           •••••• 12
  WHITE BAL      ATW            SENS-UP       OFF                           D-WDR
  DAY&NIGHT      EXT↵           BRIGHTNESS    •••••• 35
  NR             ↵              D-WDR         AUTO                 LEVEL         •••••• 5
  SPECIAL        ↵              DEFOG         OFF                  RETURN        RET↵
  ADJUST         ↵              RETURN        RET↵
  EXIT           SAVE&END↵                                                  DEFOG

                                                                   POS/SIZE      ↵
                                                                   GRADATION     •••••• 0
                                                                   DEFAULT       ↵
                                                                   RETURN        RET↵
```
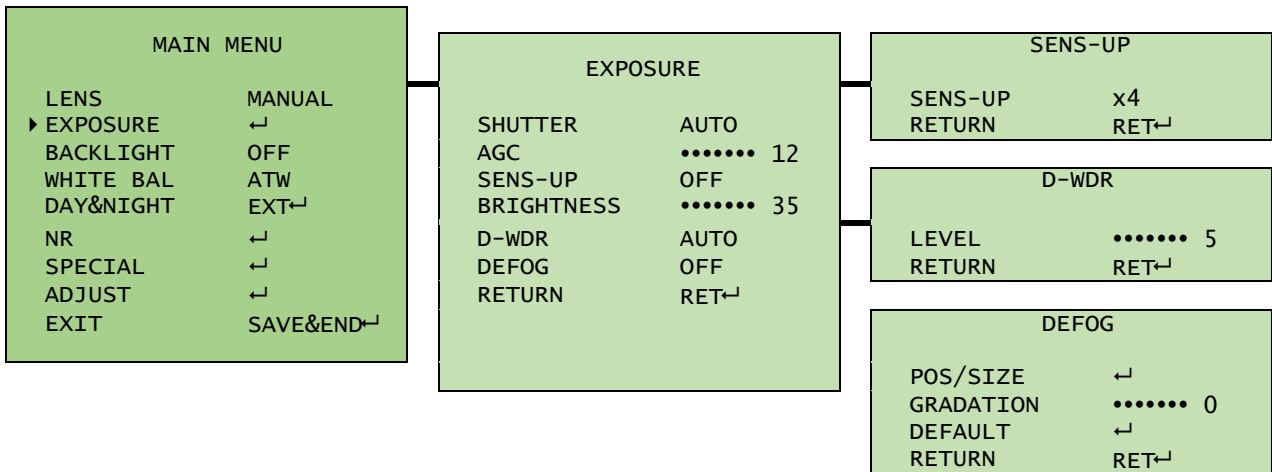
SHUTTER: Select the Shutter speed level.

Auto, 1/25(30), 1/50(60), FLK, 1/200(240), 1/400(480), 1/1000, 1/2000, 1/5000, 1/10000, 1/50000, x2, x4, x6, x10, x15, x20, x25, x30

AGC: 1 to 15

SENS-UP: Select the Digital Slow Shutter level.

Off, **Auto↵** Sens-up: x2, x4, x6, x10, x15, x20, x25, x30

BRIGHTNESS: Adjust the Brightness. 1 to 100

D-WDR: Select the Digital WDR. Auto, Off, **On↵** Level: 0 to 8

DEFOG: Select the Defog mode. Off, **Auto↵**
Pos/Size: Use up, down, right, left buttons to adjust both position and size of area.
Gradation: 0 to 2
Default: Default Defog settings.

3.4 Backlight

```
        MAIN MENU

 LENS          MANUAL
 EXPOSURE        ↵
▸BACKLIGHT      OFF
 WHITE BAL      ATW
 DAY&NIGHT      EXT↵
 NR              ↵
 SPECIAL         ↵
 ADJUST          ↵
 EXIT          SAVE&END↵
```

```
           BLC

 LEVEL          MIDDLE
 AREA            ↵
 DEFAULT         ↵
 RETURN         RET↵
```

```
          HLBLC

 SELECT         AREA1
 DISPLAY        ON↵
 BLACK MASK     ON
 LEVEL          •••••• 20
 MODE           NIGHT
 DEFAULT         ↵
 RETURN         RET↵
```

```
        NIGHT MODE

 AGC LEVEL      •••••• 150
 RETURN         RET↵
```
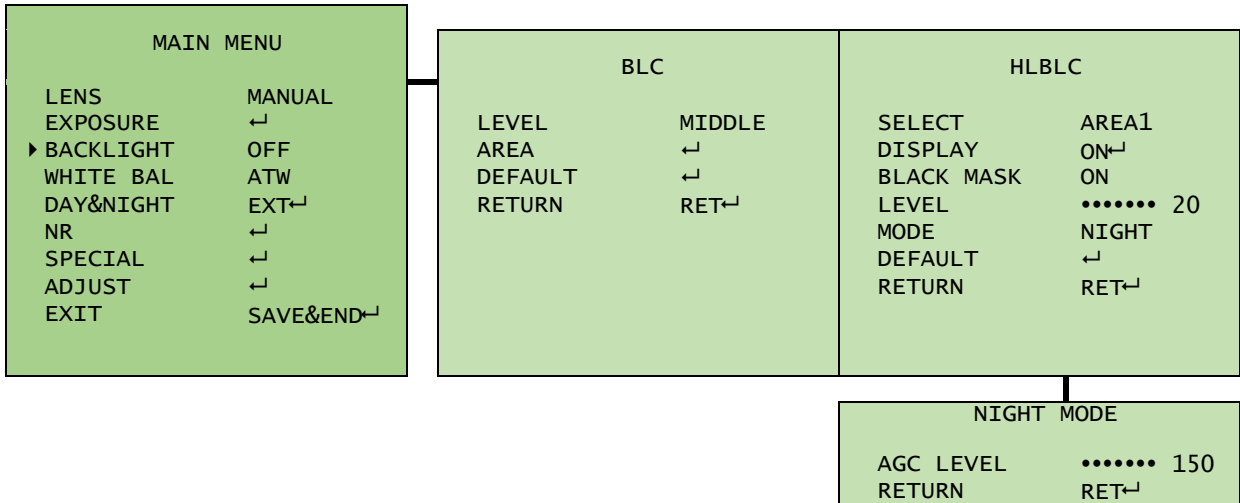
OFF, BLC, HSBLC

BLC: Prevents such a back light effect to secure a clear image under all illumination environments.
Level: Low, Middle, High
Area: Use up, down, right, left buttons to adjust both position and size of area.
Default: Default BLC settings.

HSBLC: Mask the high light zone with specific color and level.
Select: Area1, Area2, Area3, Area4
Display: Off, **On↵**   Use up, down, right, left buttons to adjust both position and size of area.
Black Mask: Off, On
Level: 0 to 100
Mode: All day, **Night↵**   AGC Level: 0 to 255
Default: Default HSBLC settings.

3.5 White Balance

The screen color can be adjusted by using the White Balance function. It compensates for deviations in the white color caused by changes in the color temperature of the light source so that the colors are reproduced correctly.

```
        MAIN MENU

 LENS          MANUAL
 EXPOSURE        ↵
 BACKLIGHT      OFF
▸WHITE BAL      ATW
 DAY&NIGHT      EXT↵
 NR              ↵
 SPECIAL         ↵
 ADJUST          ↵
 EXIT          SAVE&END↵
```

```
          MANUAL

 BLUE           •••••• 50
 RED            •••••• 50
 RETURN         RET↵
```
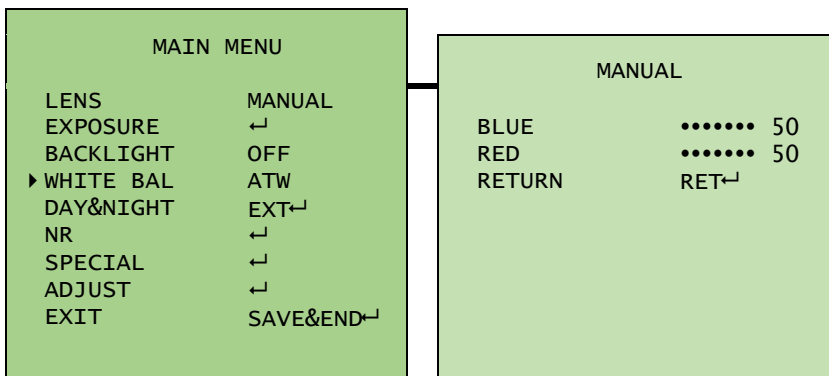
AWB, ATW, AWC→SET, INDOOR, OUTDOOR, MANUAL

AWC→SET↵   Push enter button to set the color balance.

MANUAL↵   Blue: 0 to 100
Red: 0 to 100

3.6 Day & Night

```
      MAIN MENU                               D&N  EXT

  LENS          MANUAL             D→N (DELAY)  •••••••  3
  EXPOSURE      ↵                  N→D (DELAY)  •••••••  3
  BACKLIGHT     OFF                RETURN            RET↵
  WHITE BAL     ATW
▸ DAY&NIGHT     EXT↵                            D&N  AUTO
  NR            ↵
  SPECIAL       ↵                  D→N (CDS)    •••••••  205
  ADJUST        ↵                  D→N (DELAY)  •••••••  3
  EXIT          SAVE&END↵          N→D (CDS)    •••••••  165
                                   N→D (DELAY)  •••••••  3
                                   RETURN            RET↵


           B/W                                 IR  SMART

  BURST         OFF                LEVEL        •••••••  8
  IR SMART      ON↵                AREA              ↵
  RETURN        RET↵               RETURN            RET↵
```
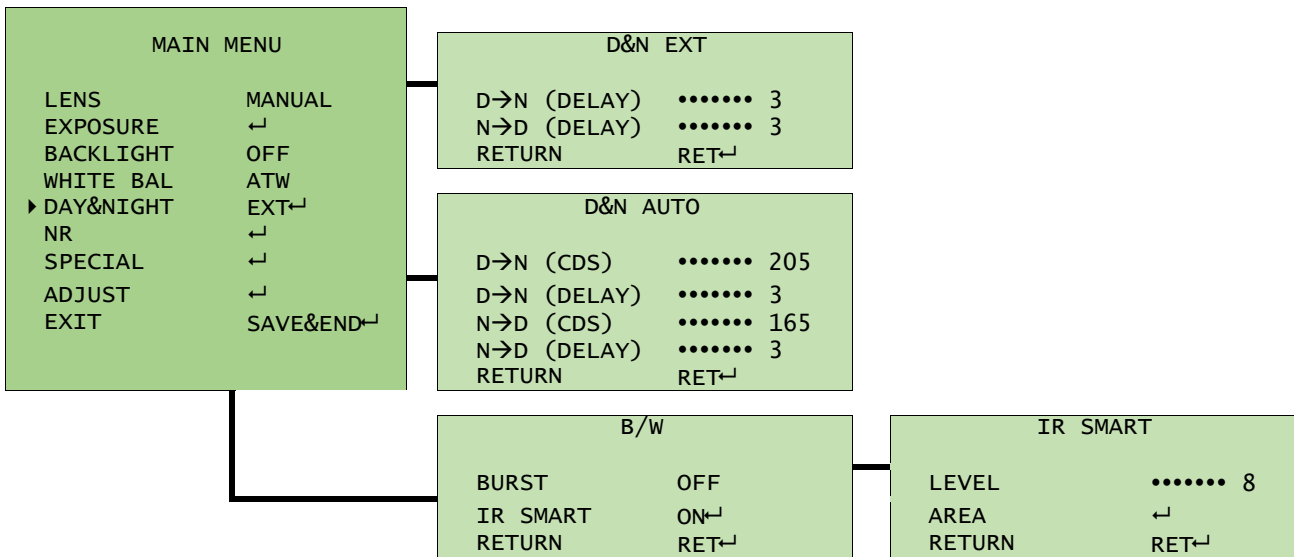
EXT, AUTO, COLOR, B/W

> **EXT:** Day/ night mode is changed by external sensor on the IR board.
> > D→N (Delay): 0 to 60
> > N→D (Delay): 0 to 60

> **AUTO:** Day/night mode is changed by AGC level of the video.
> > D→N (AGC): 0 to 255
> > D→N (Delay): 0 to 60
> > N→D (AGC): 0 to 255
> > N→D (Delay): 0 to 60

> **COLOR**: Permanent color mode

> **B/W↵**   Burst: Off, On
> > IR Smart: Off, **On↵** Level: 0 to 15
> > > Area: Use up, down, right, left buttons to adjust both position
> > > and size of area.

3.7 NR

Select Digital Noise Reduction mode.

```
      MAIN MENU
                                           DNR
  LENS          MANUAL
  EXPOSURE      ↵                2DNR           MIDDLE
  BACKLIGHT     OFF             3DNR           MIDDLE
  WHITE BAL     ATW             RETURN         RET↵
  DAY&NIGHT     EXT↵
▸ NR            ↵
  SPECIAL       ↵
  ADJUST        ↵
  EXIT          SAVE&END↵
```
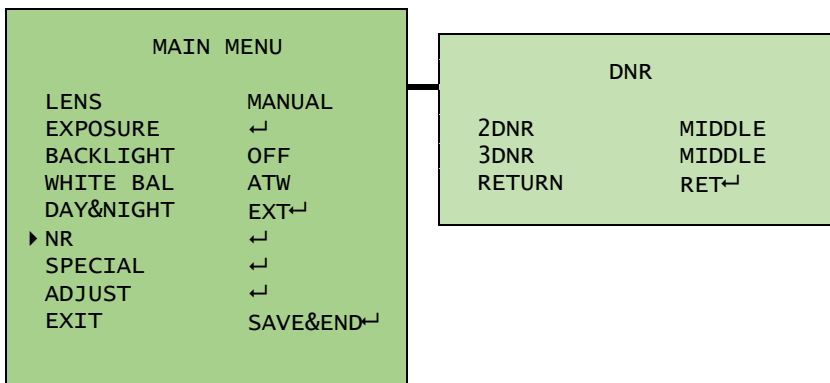
> **DNR**:   2DNR: Off, Low, Middle, High
> > 3DNR: Off, Low, Middle, High

3.8 Special

```
        SPECIAL
CAM TITLE    OFF
D-EFFECT     ↵
MOTION       OFF
PRIVACY      OFF
LANGUAGE     ENG
DEFECT       ↵
RETURN       RET
```

```
        CAMERA 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 ▶ ← → ↑ ↓ ( )
   ⁻ − _ ■ / = & : ~ , .

   ←   →   C L R   P O S   E N D
```

```
        D-EFFECT

FREEZE       OFF
MIRROR       OFF
NEG.IMAGE    OFF
RETURN       RET↵
```

```
        MOTION

SELECT       AREA1
DISPLAY      ON↵
SENSITIVITY  •••••• 64
COLOR        GREEN
TRANS.       1.00
ALARM        ↵
DEFAULT      ↵
RETURN       RET↵
```

```
        ALARM

VIEW TYPE    ALL
OSD VIEW     ON
TIME         •••••• 3
RETURN       RET↵
```

```
        PRIVACY

SELECT       AREA1
DISPLAY      COLOR↵
COLOR        WHITE
TRANS.       1.00
DEFAULT      ↵
RETURN       RET↵
```

```
        LIVE DPC

AGC LEVEL    •••••• 16
LEVEL        •••••• 100
RETURN       RET↵
```

```
        DEFECT

LIVE DPC     ON↵
WHITE DPC    ON↵
BLACK DPC    OFF
RETURN       RET↵
```

```
        WHITE DPC

POS/SIZE     ↵
START        ↵
DPC VIEW     OFF
LEVEL        •••••• 16
AGC          •••••• 14
SENS-UP      x8
RETURN       RET↵
```

```
        BLACK DPC

POS/SIZE     ↵
START        ↵
DPC VIEW     OFF
LEVEL        •••••• 100
RETURN       RET↵
```

CAM TITLE: 15 alpha-numeric characters

D-EFFECT: Freeze: Off, On
Mirror: Off, Mirror, V-Flip, Rotate
Neg.Image: Off, On

MOTION: Off, **On↵**   Select: Area1, Area2, Area3, Area4
Display: Off / **On↵**   Use up, down, right, left buttons to adjust both position and size of area.

Sensitivity: 0 to 100
Color: Green, Blue, White, Red
Transparency: 0.00, 0.25, 0.75, 1.00
Alarm: View Type: Off, Block, Outline, All
             OSD View: Off, On
             Time: 0 to 15
Default: Default Motion settings.

PRIVACY: Off, **On↵**   Select: Area1, Area2, Area3, Area4
                    Display: Off, **Mosaic**, **Inversion**, **Color**: Use up, down, right, left buttons
                                                            to adjust both position and size
                                                              of area.
                   Color: User, White, Black, Red, Blue, Yellow, Green, Cyan
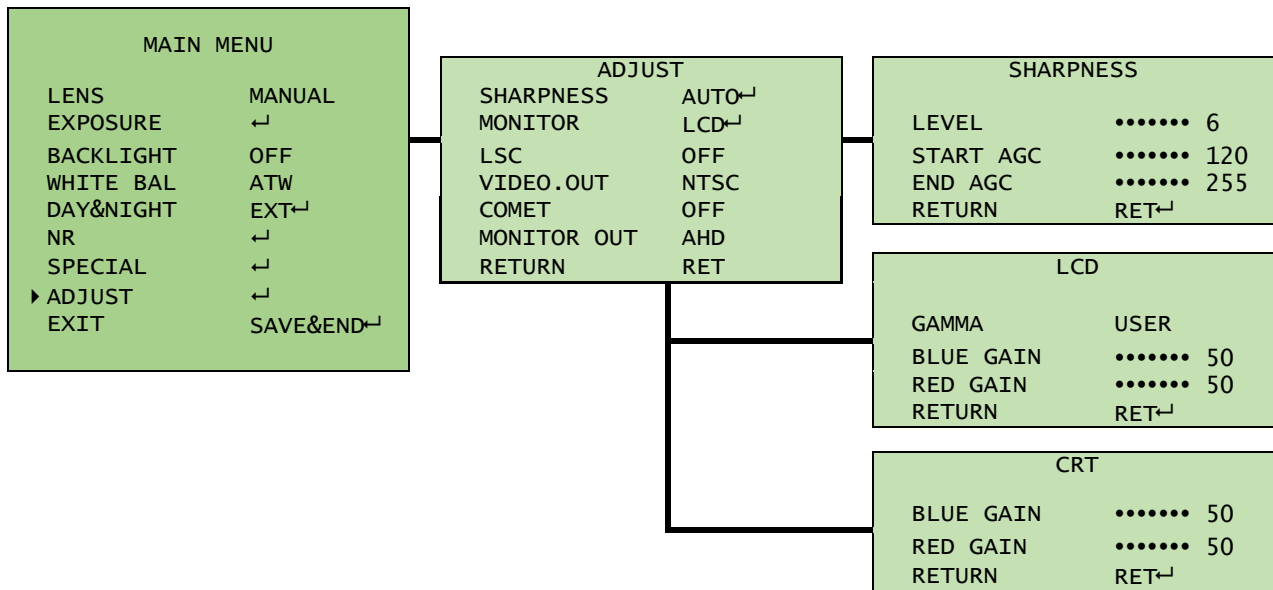   Transparency: 0.25, 0.50, 0.75, 1.00
                   Default: Default privacy settings.

LANGUAGE: ENG (English), CHN1 (Chinese 1), CHN2 (Chinese 2), GER (German),
              FRA (French), ITA (Italian), SPA (Spanish), POL (Polish), RUS (Russian),
              POR (Portuguese), NED (Dutch), TUR (Turkish)

DEFECT: Live DPC: Off, **On↵**   AGC Level: 0 to 255
                                Level: 0 to 100

         White DPC: Off, **On↵**   Pos/Size: Use up, down, right, left buttons to adjust
                                    both position and size of area.
                                    Start: Close the iris then press enter button.
                                    DPC View: Off, On
                                    Level: 0 to 60
                                    AGC: 0 to 14
                                    Sens-up: x2, x4, x6, x8, x10, x15, 20, x25, x30

         Black DPC: Off / **On↵**   Pos/Size: Use up, down, right, left buttons to adjust
                                    both position and size of area.
                                    Start: Press enter button.
                                    DPC View: Off / On
                                    Level: 0 to 100

3.9 Adjust

```
        MAIN MENU

LENS           MANUAL
EXPOSURE       ↵
BACKLIGHT      OFF
WHITE BAL      ATW
DAY&NIGHT      EXT↵
NR             ↵
SPECIAL        ↵
▸ADJUST        ↵
EXIT           SAVE&END↵
```

```
          ADJUST
SHARPNESS      AUTO↵
MONITOR        LCD↵
LSC            OFF
VIDEO.OUT      NTSC
COMET          OFF
MONITOR OUT    AHD
RETURN         RET
```

```
        SHARPNESS

LEVEL        •••••••  6
START AGC    •••••••  120
END AGC      •••••••  255
RETURN       RET↵
```

```
           LCD

GAMMA          USER
BLUE GAIN    •••••••  50
RED GAIN     •••••••  50
RETURN       RET↵
```

```
           CRT

BLUE GAIN    •••••••  50
RED GAIN     •••••••  50
RETURN       RET↵
```

SHARPNESS: Off, **Auto**↵ Level: 0 to 10
                                    Start AGC: 0 to 255
                                    End AGC: 0 to 255

MONITOR: LCD↵   Black Level: 0 to 60
                              Gamma: User, 0.45, 0.50, 0.55, 0.60, 0.65, 0.70, 0.75, 0.80, 0.85, 0.90,
                                       0.95, 1.00
                              Blue Gain: 0 to 100
                              Red Gain: 0 to 100

               CRT↵   Blue Gain: 0 to 100
                              Red Gain: 0 to 100

LSC: Select the Lens Shading Compensation. Off, On

VIDEO OUT: Select PAL or NTSC

COMET: Off, On. It can improve CVBS image quality.

MONITOR OUT: Select AHD, HD(TVI) or CVBS

3.10 Exit

SAVE&END: Save and exit OSD menu.

RESET: Full factory reset

NOT SAVE: Exit the OSD without saving settings.

4 Appendix

4.1 Specification

Model	2.8mm	3.6mm
IMAGE		
Lens	Fixed 3.6mm F2.0	Fixed 3.6mm F2.0
Image Sensor	1/2.9" Sony Exmor CMOS	1/2.9" Sony Exmor CMOS
Effective Pixels	1,985(H) x 1,105(V)	1,985(H) x 1,105(V)
Min. Illumination	Color: 1.0Lux@F1.6, 50IRE BW: 0Lux@IR LED On	Color: 1.0Lux@F1.6, 50IRE BW: 0Lux@IR LED On
Scanning Mode	Progressive Scan	Progressive Scan
Sync. System	Internal	Internal
Day and Night Mode	True D/N(Auto, Color, B&W)	True D/N(Auto, Color, B&W)
Wide Dynamic Range	Yes	Yes
Back Light Compensation	BLC, HSBLC	BLC, HSBLC
Noise Reduction	2DNR, 3DNR	2DNR, 3DNR
White Balance Control	AWB, ATW, AWC, Indoor, Outdoor, Manual	AWB, ATW, AWC, Indoor, Outdoor, Manual
Image Effect	Freeze, Mirror, Negative Image, LSC(Shading), Defog	Freeze, Mirror, Negative Image, LSC(Shading), Defog
Shutter Speed	Auto, 1/60, FLK ~ 1/50,000sec	Auto, 1/60, FLK ~ 1/50,000sec
Sens-up	Off, Auto(x2, x4, x6, x8, x10, x15, x20, x25, x30)	Off, Auto(x2, x4, x6, x8, x10, x15, x20, x25, x30)
IR Illuminator Quantity	18 SMD IR LEDs	18 SMD IR LEDs
Distance	20m	20m
S/N Ratio	More than 50dB(AGC off)	More than 50dB(AGC off)
VIDEO		
Resolution	1920x1080p	1920x1080p
Frame Rate	25/30fps	25/30fps
Video Output	TVI, AHD, CVBS Selectable	TVI, AHD, CVBS Selectable
Video Mode	NTSC, PAL Selectable	NTSC, PAL Selectable
FUNCTION		
Motion Detection	4 Zones	4 Zones
Privacy Masking	4 Zones	4 Zones
Defect Detection	Live DPC, White DPC, Black DPC	Live DPC, White DPC, Black DPC
Monitor	CRT, LCD	CRT, LCD
Language	ENG, CHN1, CHN2, GER, FRA, ITA, SPA, POL, RUS, POR, NED, TUR	
OSD Setup	Coaxial Control(UTC)	Coaxial Control(UTC)
EXTERNAL IN/OUT		
Power Input	DC Jack	DC Jack
Video Output	BNC Connector	BNC Connector
ETC		
Operating Humidity	0 ~ 96%RH(Non-condensing)	0 ~ 96%RH(Non-condensing)
Operating Temperature	-20℃ ~ +50℃	-20℃ ~ +50℃
Power Supply	DC12V ± 10%	DC12V ± 10%
Power Consumption	450mA(5.4W)	450mA(5.4W)
Dimensions	xxØ x xx(H)mm	xxØ x xx(H)mm
Net Weight	Approx. 260g	Approx. 260g
Ingress Protection	IP66	IP66

※ Specifications are subject to change without notice.

HD TURRET CAMERA