WELDEX CORPORATION

Original Equipment Manufacturer of CCD Cameras, DVR's & LCD Monitors

Operation Manual

**High Resolution
Day & Night 10X Zoom Camera**

WELDEX
WDN-1003XP

WDN-1003XP

Please read carefully before using and keep in a safe place.
Design and specifications are subject to change without notice.

V.07C

**CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN**

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

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

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

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

WARNING- Changes or modifications not expressly approved by the manufacturer could void the users authority to operate the equipment.

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

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

1.0 Features

• **A/F 10x Optical Zoom**
The built-in WDN-1003XP optical zoom lens is a highly durable component. It features auto focus, auto iris, and zoom functions.

• **DNR (Digital Noise Reduction)**
The amount of low illuminance noise has been significantly reduced, and the signal-to-noise ratio (S/N ratio) as well as horizontal resolution have been improved, resulting in a clear and sharp image display even in the dark.

• **High Sensitivity**
The built-in high sensitivity SONY COLOR CCD enables a clear image even in 0.005Lux(Sens-up, Color) or lower illumination.

• **High Resolution**
Featuring 500TV line horizontal resolution in color mode and 570TV line horizontal resolution in BW mode, the camera features Sony's 410,000 pixel CCD and captures clean, noiseless, high-quality images.

• **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.

• **3-Axis camera mechanism**
The WDN-1003XP is especially incredibly flexible to install with its 3-axis camera construction, which makes the camera wall or slope mountable.

• **RS-485 Function**
The camera, using a RS-485 communication can remote control relate to ZOOM/FOCUS and OSD menu functions.

• **Sub Monitor Function**
The sub monitor function enables easy adjustment of the camera angle within the monitoring range during its installation.

• **Miscellaneous Functions**
Other miscellaneous functions of the camera include privacy zone masking, digital zoom, line lock synchronization (INT/LL), freeze, horizontal inversion, and user-configured presets.

2.0 Warnings

This information is provided to ensure your safety and to prevent any losses, financial or otherwise. Please read it carefully and use the product accordingly.

• **Warning/Attention/Special Mark Messages**

⚠ Ignoring this information may result in material loss and/or serious personal injuries including death.

⊘ Indicates "Never Allowed."

⊘ Indicates "No Disassembling.

❗ Indicates "Must Observe."

Correct Disposal of This Product
(Waste Electrical & Electronic Equipment)
(Applicable in the European Union and other European countries with separate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.
Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this items for environmentally safe recycling.
Business users should contact their supplier and check the terms and conditions of the purchase contract.
this product should not be mixed with other commercial wastes for disposal.

3.0 Precautions

Do not install the camera in extreme temperature conditions.

Only use the camera under conditions where temperatures are between -10 Deg. C and +50 Deg. C.(14 Deg. F and 122 Deg. F) Be especially careful to provide ventilation when operating under high temperatures.

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.

Do not touch the front lens of the camera.

It is one of the most important parts of the camera. Be careful not to be stained by fingerprint.

Note • If the camera is exposed to spotlight or object reflecting strong light, smear or blooming may occur.
• Please check that the power satisfies the normal specification before connecting the camera.

Do not drop the camera or subject them to physical shocks.

It can cause malfunctions to occur.

Never keep the camera face to strong light directly.

It can damage the CCD.

Do not expose the camera to rain or spill beverage on it.

If it gets wet, wipe it dry immediately. Liquids can contain minerals that corrode the electronic components.

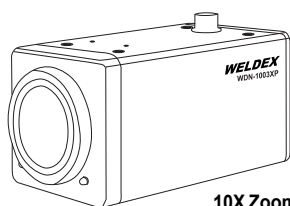**Do not expose the camera to radioactivity.**

If it is exposed to radioactivity, For heated CCD, it will be out of order.

Contents

4.0 Components

10X Zoom Camera WDN-1003XP

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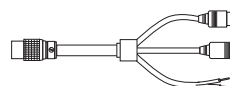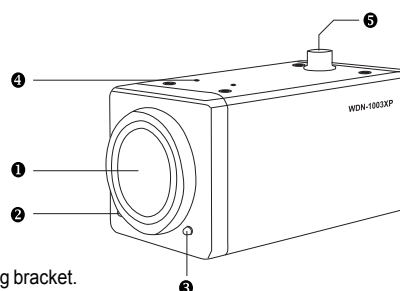**Mount Bracket**

Screw

Cable

5.0 Names and Functions of Parts

5.1 Front

❶ **Lens protection cap**
Please cover the lens when not using it.

❷ **Green LED**
In RS-485, LED turns ON/OFF when receiving specific data.

❸ **Yellow LED**
In RS-485, LED turns ON/OFF when receiving specific data.

5.2 Top & Bottom

❹ **Mounting bracket screw hole**
Mounting bracket screw hole
please use the screw hole when fixing the camera onto the mounting bracket.
please use the clamp screw as specified below.

❑ The mounting bracket can be separated and attached to the top of the camera.
In this instance please do not tighten the screw to a depth of more than 5mm
otherwise serious damage can occur to the inside of the camera.

❺ **Video output & Power input terminal**
Sends video signal and connectors to the video input terminal of the monitor.
Receives power and connectors to the video input terminal of the monitor.

Pin	Description
1	TRX- (RS-485 -)
2	TRX+ (RX-485 +)
3	NC
4	GND
5	VIDEO
6	DC 12V

5.3 Rear (Key Function)

❶ **BLC Key Button**
BLC Key operates BLC OFF-BLD HIGH in order of precedence.

❷ **NEAR Key Button**
Press NEAR Key to focus the lens to far subject.
This button is used for right in the menu mode.

❸ **SHUTTER Key Button**
SHUTTER speed can be changed each time when pressing the button.
Displays operates in order of percedence of ESC, 1/60, 1/100, 1/120
1/250, 1/500, 1/700, 1/1000, 1/1600, 1/2500, 1/5000, 1/7000, 1/10000.

❹ **FAR Key Button**
Press FAR Key to focus the lens to far subject.
This button is used for left in the menu mode.

❺ **TELE ZOOM Key Button**
When pressing TELE ZOOM key user preset 1 value displays on the screen.
After 10 second, user preset 2 value displays on the screen.
This function repeats each time when pressing the Tele zoom key.

❻ **SETTING Button**
SET Button: Used for the menu display. This button can be used to confirm settings after changing the value of the selected
function or current conditions.
TELE & WIDE Button: Used for selecting items by moving the cursor up or down on the menu screen.
NEAR & FAR Button: Used when changing items values, by moving the cursor to the left or right on the menu screen.
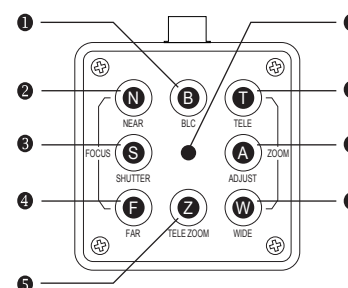
❼ **TELE Key Button**
Press TELE (Telephoto) to zoom in.
This button is used for UP in the menu mode.

❽ **ADJUSTMENT Key Button**
User preset 3, 4 value displays repeatly when pressing Adjustment key.
When it is User preset 3 statue, RED LED is ON and when it is suer preset 4 statue, LED is OFF.
Used user preset 3 for special purpose of night mode. Used preset 4 for break up mode.

❾ **WIDE Key Button**
Press WIDE (Wide ange) to zoom out.
This button is used for DOWN in the menu mode.

6.0 Connection

6.1 Connecting to Monitor
Connect the VIDEO-OUT jack to the VIDEO-IN jack of monitor.
❑ As the connecting method varies with the instruments,
  refer to the manual supplied with the instrument.
❑ If necessary, you can connect the monitor to the REMOTE jack on the back of your camera.
❑ Only connect the cable when the power is turned off.
❑ Set the 75 Ohm / Hi-Z selection switch as shown below if you have an intermediate device.
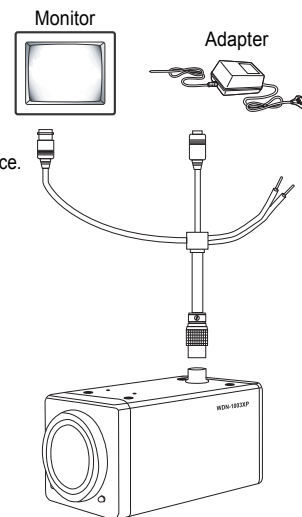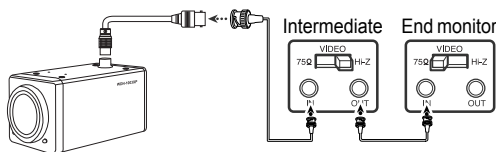
6.2 Connecting to Power
Connect the adaptor to the power input connector as shown in the figure below.
The recommended adaptor specification for WDN-1003XP is DC 12V / 500mA.

❑ Standard voltage for camera operation : DC 12V ± 10%
❑ There may be some deviation in voltage drop depending on the type of wire
  and the manufacturer.

6.3 RS-485 Communication Control
Using a RS-485 communication, it will be able to control the ZOOM/FOCUS and OSD menu at the Controller or DVR.

❑ The case which it controls from the PC Using a RS-485 converter, It connects to RS-485 control cable outside camera and serial cable.
  EX) SERIAL PORT OF THE PC(COM1) -- SERIAL CABLE -- RS-485 CONVERTER -- RS-485 CONTROL CABLE
❑ The case which it controls from the DVR or System Controller .
  It connects the RS-485 control cable in the connection terminal of 485 control boards which are connected with the DVR or System Controller.

RED (TRX+): RS-485 +
WHITE (TRX-): RS-485 -

485 CONTROL BOARD CONNECTION TERMINAL	RS-485 CONTROL CABLE
(+)CONNECTION TERMINAL	RED (TRX+)
(-)CONNECTION TERMINAL	WHITE(TRX-)

Note • When you construct external control systems for a camera control, please use to the PELCO-D PROTOCOL.
  • When you connecting to RS-485 control cable, please peel off the outer skin inside the RS-485 control cable.

7.0 Camera Operation

7.1 Key Function

Use the nine key function on rear of the camera

❶ TELE ZOOM KEY

When pressing TELE ZOOM KEY user preset 1 value displays on the screen.
After 10 second, user preset 2 value displays on the screen.
This function repeats each time when pressing the Tele zoom key.
Note that user preset do not work unless the value is set up.

- **TELE ZOOM setting** : Set user preset value 1 when pressing tele zoom key.
  (USER PRESET 1 Setting) Setting value can be determine by user however, basic default value and optical I0x
  shoud be preset before packing.
- **WIDE ZOOM setting** : Set user preset value 2 when pressing tele zoom key.
  (USER PRESET 2 Setting) Setting value can be determine by user however, basic default value and optical Ix
  shoud be preset before packing.
- **DURATION Fixed** : While tele zoom key is operating.
  It will be operated in about 10 seconds after user preset 1 moves to user preset 2.

❷ SHUTTER KEY

SHUTTER speed can be changed each time when pressing the button.
Displays operates in order of percedence of ESC,1/60,1/100, 1/120, 1/250,1/500,1/700,1/1000,1/1600,1/2500,1/5000, 1/7000, 1/10000. When ESC operates RED LED is OFF, when shutter operates LED is on.

❸ BLC KEY

BLC KEY operates BLC OFF- BLD HIGH in order of precedence.
When BLC operates RED LED is ON, when BLC is not operating LED turns off.

---
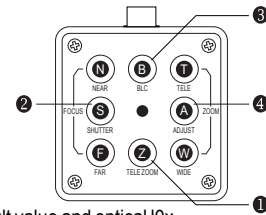
❹ ADJUSTMENT KEY

When pressing this button user preset 3and 4 displays and repeats automatically.
Note that unless preset 2and 4 value is presetted, the function does not operate.
Used user preset 3 for special purpose of night mode. Used preset 4 for break up mode.
When it is User preset 3 statue, RED LED is ON and when it is user preset 4 statue, LED is OFF.

- **NIGHT setting** : 1) At FOCUS SETUP/ MODE AUTO, fix the ZOOM POSITION SET UP of tele to maximim 1x.
  (USER PRESET 3 Setting) 2) Setting EXPOSURE at mode.

| SHUTTER >> A.FLK | AGC >> OFF | DNR >> OFF |
| SENS-UP >> B/W |

3) Setting ETC at mode DAY/NIGHT >> BW.

- **NIGHT mode cancel setting** : At FOCUS SETUP/ MODE AUTO, fix the ZOOM POSITION SET UP of WIDE to maximum 1x.
  Remaining value can be fixed according to the basic default value.
  Note that the function does not operate unless user preset 3 and 4 is fixed.

7.2 Controlling the temporately Protocol Yellow LED & Green LED ON/OFF.

There are two different port. At RS-485,
if it receives specific data LED turns ON/OFF.
Note that,Communication speed only operates in 38400bps.

LED Operation	Protocol
Yellow LED OFF	C5 9E 00 00 00 63
Yellow LED ON	C5 9E 01 00 00 64
Green LED OFF	C5 9F 00 00 00 64
Green LED ON	C5 9F 01 00 00 65

7.3 Menu Configuration

SETUP SETUP MENU	
CAM TITLE	• OFF　• ON
WHITE BALANCE	• ATW(OUTDOOR)　• AWC→SET　• MANUAL
BACKLIGHT	• OFF　• LOW　• MIDDLE　• HIGH
MOTION DETECTION	• OFF　• ON
FOCUS	• MODE　• ZOOM TRK　• ZOOM SPEED　• D-ZOOM • DISP ZOOM MAG　• ZOOM POS INIT　• LENS INIT　• END
EXPOSURE	• BRIGHTNESS　• IRIS　• SHUTTER　• AGC　• DNR　• SENS-UP　• END
SPECIAL	• USER PRESET　• PRIVACY　• DAY/NIGHT　• SYNC • COMM ADJ　• IMAGE ADJ　• END
RESET	
EXIT	

7.4 Menu Setup

❶ Press the SET button to access the main setup mode.
   ∞ Main setup menu is displayed on the monitor screen.

❷ Select the desired feature using the TELE(UP) or WIDE(DOWN) button.
   ∞ Each pressing of the TELE(UP) or WIDE(DOWN) button moves
      the indicator to the next or previous feature.
   ∞ Move the arrow indicator to the desired feature item.

❸ Change the status of the selected feature using
   the FAR(LEFT) or NEAR(RIGHT) button.

❹ When completed, move the arrow indicator to 'EXIT' and press the SET button.

Select feature using the TELE(UP) or WIDE(DOWN) button.

```
            MAIN SETUP
 ▶ CAM TITLE        OFF
   WHITE BAL        ATW  ↵
   BACKLIGHT        OFF
   MOTION DET       OFF
   FOCUS  ↵
   EXPOSURE  ↵
   SPECIAL  ↵
   RESET
   EXIT
```
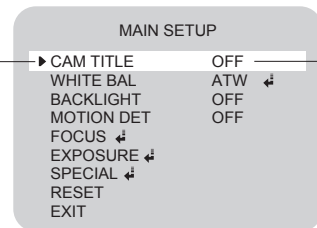
Change the status using the FAR(LEFT) or NEAR(RIGHT) button.

Note • Features marked with a ↵ have an accessible submenu.
         • Access the submenu by pressing the SET button.

7.4.1 Cam Title

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

❶ Press the SET button to display the main setup menu and move the arrow indicator to
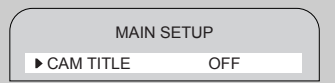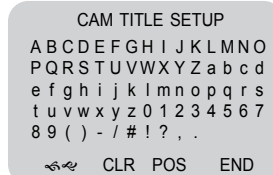   'CAM TITLE' using the TELE(UP) or WIDE(DOWN) button.

❷ Set 'CAM TITLE' to 'ON' using the FAR(LEFT) or NEAR(RIGHT) button.

Note • If the CAM TITLE feature is set to 'OFF',
         the name will not displayed in the monitor.

```
            MAIN SETUP
 ▶ CAM TITLE        OFF
```

❸ Press SET button.

❹ You can enter up to 15 characters.
   ① Move the cursor to the character entry field using the FAR(LEFT) or NEAR(RIGHT) button.
   ② Use TELE(UP), TELE(UP), FAR(LEFT), and NEAR(RIGHT) buttons to
      select a desired character.
   ③ Press the SET button to confirm selection of the blinking character.
      The character is then saved, and the cursor in the entry field moves to the next position.
   ④ Repeat steps ① through ③ until the desired name has been entered.

```
        CAM TITLE SETUP
 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 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 0 1 2 3 4 5 6 7
 8 9 ( ) - / # ! ? , .

    ↶↷   CLR  POS    END
```

Note **Correcting Mistakes**: Move the cursor to 'CLR' and press the SET button to clear the entire entry.
         To modify one character, use or to position the cursor above the character to be modified and click
         the SET button after selecting the character to enter.

---

❺ Select on screen position of the CAM TITLE.
   ① Move the cursor to 'POS' and press SET button.

```
 8 9 ( ) - / # ! ? , .
    ↶↷   CLR  POS    END
```
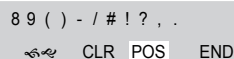
   ② The CAM TITLE is displayed on the top-left of the monitor screen. (Default position).
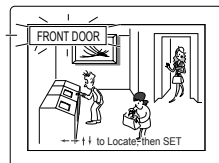
   ③ Select the position by using the 4-directional buttons, then press the SET button to confirm the position.

7.4.2 White Balance Control

Your camera provides three 'WHITE BAL' control modes for your choosing
in adjusting the white balance.

❶ Press the SET button to access the main setup menu and move the indicator to
   'WHITE BAL' using the TELE(UP) or WIDE(DOWN) button.
❷ Set 'WHITE BAL' using the FAR(LEFT) or NEAR(RIGHT) button.

The three white balance control modes are as follows:

```
               MAIN SETUP
   CAM TITLE          OFF
 ▶ WHITE BAL          ATW   ↵
   BACKLIGHT          OFF
   MOTION DET         OFF
   FOCUS  ↵
```

🔭 **ATW(Auto Tracking White Balance):**
  ❑ OUTDOOR: This mode can be used within the color temperature range 1800~10500°K
   (Ex: fluorescent light, outdoor, sodium vapor lamp or inside tunnels).
  ❑ INDOOR: This mode can be used within the color temperature range 3000K~10500°K

🔭 **AWC(Auto White balance Control):**
  The white balance is automatically adjusted in a specific environment. In order to obtain the best result, press the SET
  button while the camera focuses on white paper. If the environment including the light source is changed, you have to
  adjust the white balance again.

🔭 **Manual:** To fine adjust, select the Manual mode. You can increase or decrease the red or blue factor while monitoring the
   difference on the screen. Set to 'MANUAL' mode and press the SET button. Increase or decrease the value for red(R-
   Gain) and blue(B-Gain), watching the color of the picture, and press the SET button when you obtain the best color.

🎤 **Note** Proper White Balance may not be obtained under the following conditions.
  ① When the scene contains mostly high color temperature object, such as a blue sky or sunset.
  ② When the scene is dim.
  ③ If your camera directly faces a fluorescent lamp or is used in an environment of varying lighting conditions.

7.4.3 Backlight

When there is a strong backlight behind the object, clear images of the background as well as the object can still be obtained by
using the BACKLIGHT function.

❶ Please position the arrow to point to 'BACKLIGHT' on the SETUP menu by using the TELE(UP) and WIDE(DOWN) buttons.
❷ Please select the mode you wish to operate by pressing the FAR(LEFT) or NEAR(RIGHT) button.
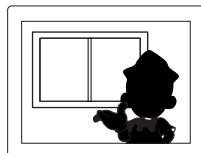
```
               MAIN SETUP

   CAM TITLE          OFF
   WHITE BAL          ATW   ↵
 ▶ BACKLIGHT          OFF
   MOTION DET         OFF
   FOCUS  ↵
```

🔭 **HIGH/MIDDLE/LOW :** You can adjust the sensitivity of Backlight Compensation.
🔭 **OFF :** BACKLIGHT function does not operate.
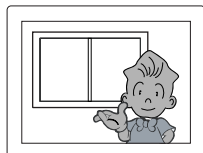
BACKLIGHT ON   BACKLIGHT OFF

7.4.4 Motion Detection

This product has a feature that allows you to observe movements of objects in 4 different areas on the screen, and the words
'MOTION DETECTED' appear on the screen when movement is detected; hence a single individual can conduct supervision
efficiently. The camera detects an object's movement by sensing disparity of outline, and level of brightness and color.

❶ Please press the SETUP button.
 -OFF: MOTION DETECTION mode is cancelled.
 -ON: Any motion in the selected areas is observed.
❷ Please press the SETUP button.
 -OFF: MOTION DETECTION mode is cancelled.
 -ON: Any motion in the selected areas is observed.
❸ Please select the area you wish to observe from the 4 areas in AREA SEL mode.
❹ Please select ON mode for the chosen area.
❺ Please adjust the size of the area to be observed by using
 the TELE(UP), WIDE(DOWN), FAR(LEFT) or NEAR(RIGHT) button.
❻ Please press the SETUP button to save changes and complete the setting.

```
                MD SETUP

 ▶ DISP ALARM         OFF
   AREA SEL           AREA1
   AREA MODE          ON
   TOP                10 ▮▮▮▮▮▮▮
   BOTTOM             50 ▮▮▮▮▮▮▮
   LEFT               10 ▮▮▮▮▮▮▮
   RIGHT              50 ▮▮▮▮▮▮▮
   END
```

🎤 **Note** Tips on Using the Motion Detection Feature.
  ❑ The camera interprets sudden changes in lighting and subsequent change in brightness of an object as motion.
  ❑ With the feature enabled, other algorithms may require additional time to operate than usual.
  ❑ This system does not guarantee prevention of fire or theft. The manufacturer shall not be held responsible
   for any accident or damage incurred.

7.4.5 Focus

❶ Press the SET button to access the main setup manu and then position the indicator over 'FOCUS' using the TELE(UP) or WIDE(DOWN) button.

❷ Press the SET button.

> **MODE:** You can select the most suitable zoom mode. Move the arrow indicator to 'MODE' using TELE(UP) or WIDE(DOWN) button.

```
MOTION DET        OFF
▶ FOCUS ↵
  EXPOSURE ↵
```

```
        FOCUS SETUP

▶ MODE             AUTO ↵
  ZOOM TRK         ON
```

❑ AUTO : Select AUTO and press the SET button to confirm. Increase or decrease optical zoom (ZOOM) or digital zoom (DZOOM) positions using the TELE(UP) or WIDE(DOWN) button while verifying the changes on screen. Enabling D-ZOOM (ON) means that digital zoom will activate once optical zoom ends. Focus is automatically adjusted with moving zoom.

❑ ONE PUSH : Focus is automatically adjusted just once, after zoom position is changed. Select 'ONE PUSH' and press the SET button to confirm. Increase or decrease optical zoom (ZOOM) or digital zoom (D-ZOOM) positions using the directional buttons while verifying the changes on screen. Press the SET button once desired image quality is obtained.

```
ZOOM/FOCUS  POS  SETUP



↑: TELE      ↓:WIDE

Press SET to Return
```

```
ZOOM/FOCUS  POS  SETUP


↑: TELE      ↓:WIDE
←: NEAR    →:FAR

Press SET to Return
```

❑ MANUAL : Select 'MANUAL' and press the SET button to confirm. Increase or decrease optical zoom (ZOOM) or digital zoom (D-ZOOM) positions using the directional buttons while verifying the changes on screen. Press the SET button once desired image quality is obtained. Focus can be manually adjusted, independent of moving zoom.

> **ZOOM TRK:** You can select to use 'ZOOM TRK'. Move the arrow indicator to 'ZOOM TRK' using TELE(UP) or WIDE(DOWN) button. Set 'ZOOM TRK' to on using FAR(LEFT) or NEAR(RIGHT) button.

```
        FOCUS SETUP

  MODE             AUTO
▶ ZOOM TRK         ON
  ZOOM SPEED       FAST
```

> **ZOOM SPEED:** Configure zoom tracing speed using this feature. Position the indicator over 'ZOOM SPEED' using the TELE(UP) or WIDE(DOWN) button and then set to desired mode using the FAR(LEFT) or NEAR(RIGHT) button.

❑ FAST: To move zoom fast.   ❑ SLOW: To move zoom slowly.

```
        FOCUS SETUP

  MODE             AUTO
  ZOOM TRK         ON
▶ ZOOM SPEED       FAST
```

Note ❑ The 'ZOOM SPEED' mode cannot be used if 'MODE' is set to 'AUTO' and 'ZOOM TRK' is 'ON'.

> **D-ZOOM:** Configure magnification limit from x2~x10 using this feature. Position the indicator over 'D-ZOOM' using the TELE(UP) or WIDE(DOWN) button. Set 'D-ZOOM' to 'ON' and press the SET button to confirm.

```
        FOCUS SETUP

  MODE             AUTO
  ZOOM TRK         ON
  ZOOM SPEED       FAST
▶ D-ZOOM           OFF
  DISP ZOOM MAG    OFF
```

❑ Set 'ZOOM LIMIT' to the desired level using the FAR(LEFT) or NEAR(RIGHT) button.

```
D-ZOOM LIMIT SETUP

▶ LIMIT  X2

  END
```

> **DISP ZOOM MAG:** Use this feature to display the current zoom magnification level on screen. Position the indicator over 'DISP ZOOM MAG' using the TELE(UP) or WIDE(DOWN) button. Then set to ON using the FAR(LEFT) or NEAR(RIGHT) button.

```
        FOCUS SETUP

  MODE             AUTO
  ZOOM TRK         ON
  ZOOM SPEED       FAST
  D-ZOOM           OFF
▶ DISP ZOOM MAG    OFF
```

୨୦ **ZOOM POS INIT:** Configure zoom position using this feature. Position the indicator ove 'ZOOM POS INIT' using the FAR(LEFT) or NEAR(RIGHT) button.

Note ▫ Preset setting has priority over a ZOOM POS INIT setting

```
          FOCUS SETUP

MODE               AUTO
ZOOM TRK           ON
ZOOM SPEED         FAST
D-ZOOM             OFF
DISP ZOOM MAG      OFF
▶ ZOOM POS INIT    ON
LENS INIT          OFF
```

୨୦ **LENS INIT:** Use this feature to initialize the lens(1x, WIDE). Position the indicator over LENS INIT.
Using the TELE(UP) or WIDE(DOWN) button. Press the SET button to confirm.

```
          FOCUS SETUP

MODE               AUTO
ZOOM TRK           ON
ZOOM SPEED         FAST
D-ZOOM             OFF
DISP ZOOM MAG      OFF
ZOOM POS INIT      ON
▶ LENS INIT        ON
END
```

୨୦ **END:** To revert to the main setup menu.

7.4.6 Exposure

❶ Press the SET button to access the main setup manu and then position the indicator over 'EXPOSURE'S using the TELE(UP) or WIDE(DOWN) button.
❷ Press the SET button.

```
MOTION DET         OFF
FOCUS ↵
▶ EXPOSURE ↵
SPECIAL ↵
```

୨୦ **BRIGHTNESS:** Use this feature to adjust image brightness. Position the indicator over 'BRIGHTNESS' using the TELE(UP) or WIDE(DOWN) button. Then increase or decrease brightness level using the FAR(LEFT) or NEAR(RIGHT) button while verifying the changes on screen. Set END once desired level is obtained.

```
          EXPOSURE SETUP

▶ BRIGHTNESS       25 . . . . . .
IRIS               AUTO
SHUTTER            ---
AGC                NORMAL
```

୨୦ **IRIS:** Set 'IRIS' to 'AUTO' or 'MANUAL'. Position the indicator over 'IRIS' using the TELE(UP) or WIDE(DOWN) button and then select the desired iris mode using the FAR(LEFT) or NEAR(RIGHT) button.

▫ **AUTO:** The iris automatically activated upon illumination.
▫ **MANUAL:** Manual iris configuration. Set 'IRIS' to 'MANUAL' using the FAR(LEFT) or NEAR(RIGHT) button and then press the SET button. Increase or decrease iris level using the FAR(LEFT) or NEAR(RIGHT) button while verifying the changes on screen.

```
          EXPOSURE SETUP

BRIGHTNESS         25 . . . . . .
▶ IRIS             AUTO
SHUTTER            ---
AGC                NORMAL
```

---

୨୦ **SHUTTER:** Control image brightness by adjusting shutter speed.
① Position the indicator over 'SHUTTER' using the TELE(UP) or WIDE(DOWN) button. Then select the desired shutter mode (A.FLK, ESC, MANUAL) using the FAR(LEFT) or NEAR(RIGHT) button.

▫ **A.FLK (NTSC: 1/100, PAL: 1/120):** Flicker-free mode
▫ **ESC**: Automatic shutter speed setting (optimal)
▫ **MANUAL:** Manual shutter speed setting

```
          EXPOSURE SETUP

BRIGHTNESS         25 . . . . . .
IRIS               AUTO
▶ SHUTTER          ---
AGC                NORMAL
DNR                LOW
SENS-UP            OFF
END
```

② If you choose 'MANUAL', select the optimal shutter speed.
▫ In MANUAL mode, the optimal shutter speed needs to be designated. Select from 1/60 to 1/120,000 (NTSC) from 1/50 to 1/120,000 (PAL).
* 'Sens-Up' mode can be configured manually (2x to 128x).
▫ Verify changes made to the shutter speed by referencing to changes in on screen brightness.

```
SHUTTER MANUAL SETUP

SHUTTER VAL    1/60

END
```

② Press the SET button to complete.

Note ▫ Image may become unstable if the camera is set to 'ESC' mode and faces a strong fluorescent light.
▫ Under 'ESC' mode, the brightness can be adjusted using the FAR(LEFT) or NEAR(RIGHT) button.
▫ The WDR feature is not available under MANUAL mode.
▫ Sens-up is disabled under 'MANUAL' or 'A.FLK' mode.

⇨ **AGC(Auto Gain Control):** For brighter images.
  ↖ Position the indicator over 'AGC' using the TELE(UP) or WIDE(DOWN) button.
  ↖ Set 'AGC' to the desired mode using the FAR(LEFT) or NEAR(RIGHT) button.
    ❑ HIGH : Wide range gain value adjustment
    ❑ NORMAL : Normal range fain value adjustment.
    ❑ OFF : Disabled

```
        EXPOSURE SETUP

  BRIGHTNESS        25 . . . . . .
  IRIS              AUTO
  SHUTTER           ---
▶ AGC               NORMAL
  DNR               LOW
```

⇨ **DNR(Digital Noise Reduction):** On screen noise reduction.
  ↖ Position the indicator over 'SSNR' using the TELE(UP) or WIDE(DOWN) button.
  ↖ Set 'SSNR' to the desired mode using the FAR(LEFT) or NEAR(RIGHT) button.
    ❑ LOW : Wide range gain value adjustment
    ❑ MIDDLE : Medium noise reduction.
    ❑ HIGH : High noise reduction.
    ❑ OFF : Disabled

```
        EXPOSURE SETUP

  BRIGHTNESS        25 . . . . . .
  IRIS              AUTO
  SHUTTER           ---
  AGC               NORMAL
▶ DNR               LOW
```

Note ❑ Changing 'AGC' setting from NORMAL to HIGH results in greater sensitivity, as well as on screen noise.
         ❑ Setting 'AGC' to OFF locks 'DNR' configuration.

⇨ **SENS-UP:**
  This feature ensures clear images at night or under low lighting conditions.
    ↖ Position the indicator over 'SENS-UP'
      using the TELE(UP) or WIDE(DOWN) button.
    ↗ Set 'SENS-UP' to the desired mode
      using the FAR(LEFT) or NEAR(RIGHT) button.

    ❑ **AUTO:** Select this mode for use in night time or under low lighting conditions
    ❑ **OFF**: Disabled

```
        EXPOSURE SETUP

  BRIGHTNESS        25 . . . . . .
  IRIS              AUTO
  SHUTTER           ---
  AGC               NORMAL
  DNR               LOW
▶ SENS-UP           OFF
  END
```

Note ❑ Once 'AUTO' mode is set, the user can configure Sens-Up limit by
         increasing /decreasing the shutter speed (e.g.: x2,...,x32, x64,..., x128).
         ❑ Enabling Sens-Up increases camera sensitivity and may result in
         additional noise and/or other phenomenons. This is normal

---

7.4.7 Special
  ▶ Press the SET button to access the main setup menu and then position the
    indicator over 'SPECIAL' using the TELE(UP) or WIDE(DOWN) button.
  ◁ Press the SET button.
    ⇨ **USER PRESET:**
      Preset user-designated configurations using this feature.
      Position the indicator over 'USER PRESET' using the TELE(UP) or
      WIDE(DOWN) button and then set to 'ON' using the FAR(LEFT) or
      NEAR(RIGHT) button. Press the SET button to confirm.

```
  MOTION DET        OFF
  FOCUS           ↵
  EXPOSURE        ↵
▶ SPECIAL         ↵
```

```
        SPECIAL SETUP

▶ USER PRESET       OFF
  PRIVACY           OFF
  DAY/NIGHT         COLOR ↵
  SYNC              INIT
```

      ❑ **PRESET NO:** Up to eight different preset configurations are supported.

```
      USER PRESET SETUP

▶ PRESET NO.        NO.1

  PRESET MODE       OFF

  PRESET SAVE

  PRESET CLEAR

  END
```

❑ **PRESET MODE:** Configure initial settings under FOCUS, EXPOSURE, etc.

```
USER PRESET MODE SETUP

FOCUS ↵
EXPOSURE ↵
ETC
END ↵
```

❑ **PRESET SAVE:** Save configured preset.

```
USER PRESET SETUP
PRESET NO.        NO.1
PRESET MODE       OFF
▶ PRESET SAVE
  PRESET CLEAR
```

❑ **PRESET CLEAR:** Clear configured preset.

```
USER PRESET SETUP
PRESET NO.        NO.1
PRESET MODE       OFF
  PRESET SAVE
▶ PRESET CLEAR
```

❑ **END:** Revert to the SPECIAL SETUP menu.

🔊 **PRIVACY:** Mask privacy area using this feature.
The mask area expand/contract upon the zoom position.

```
SPECIAL SETUP
  USER PRESET       OFF
▶ PRIVACY           OFF
  DAY/NIGHT         COLOR ↵
```

❑ **GROUP SEL:** Choose up to eight groups.
Each group can consist of four mask areas.
❑ **AREA SEL:** Configure eight mask areas.
❑ **AREA MODE:** Mask area display.
❑ **MASK TONE:** Adjust desired mask color level.
❑ **TOP:** To move the mask area up.
❑ **BOTTOM:** To move the mask area down.
❑ **LEFT:** To move the mask area left.
❑ **RIGHT:** To move the mask area right.

```
SET PRIVACY
GROUP SEL       GROUP 1
AREA SEL        AREA 1
AREA MODE       ON
MASK TONE       50   ▬▬▬▬▬▬
TOP             45   ▬▬▬▬▬▬
BOTTOM          110  ▬▬▬▬▬▬
LEFT            45   ▬▬▬▬▬▬
RIGHT           95   ▬▬▬▬▬▬
END
```

🔊 **DAY/NIGHT:** Select from COLOR, BW or AUTO modes.
❑ **COLOR:** Color mode.
❑ **B/W:** BW mode.
❑ **AUTO1, 2:** The camera automatically detects lighting conditions
and selects the mode accordingly.
Auto 1 mode is switched to IR Cut Filter more
lightning conditions than Auto 2.

```
SPECIAL SETUP
▶ USER PRESET       OFF
  PRIVACY           OFF
  DAY/NIGHT         COLOR
  SYNC              INIT
  COMM ADJ
  IMAGE ADJ
  END
```

Note ❑ When selecting AUTO2 mode, the AGC is fixed at HIGH mode.

⇨ **SYNC:** Two synchronization modes are available
　　INTERNAL and EXTERNAL LINE-LOCK.
　　In LINE-LOCK mode, it synchronizes the camera's video out
　　signal to the external SYNC signal.
　❑ **INT:** Internal synchronization.
　❑ **LL:** External line-lock synchronization
　　If you choose 'LL', you can adjust the desired phase.Press the SET button.
　　You can adjust the desired phase from 0 to 359.

```
         SPECIAL SETUP
  USER PRESET      OFF
  PRIVACY          OFF
  DAY/NIGHT        COLOR
▶ SYNC             INIT
  COMM ADJ
```

✎ **Note** ❑ For NTSC models, the line-lock mode can be used if the external SYNC signal frequency is at 60Hz.
　　　　 ❑ For PAL models, the line-lock mode can be used if the external SYNC signal frequency is at 50Hz.

⇨ **COMM ADJ:** Use this feature to select communication protocol.
　　Position the indicator over 'COMMUNICATION' using
　　the TELE(UP) or WIDE(DOWN) button.
　❑ CAM ID : Assign ID number to the camera.
　　　It is restricted available to set ID from 1 to 255.
　❑ DISP CAM ID: Displays camera ID on top left corner of the screen.
　❑ BAUD RATE: Configure baud rate from 9600, 19200, 38400, 57600bps.
　❑ UART MODE: Configure parity bit to NONE, EVEN, or ODD.
　　　　Data bit is set to 8bit, and stop bit to 1bit.
　　　　Set the UART MODE to EVEN if using the Remote Controller.
　❑ RET PKT : Used to transfer a packet.　　　❑ END

```
         SPECIAL SETUP
  USER PRESET      OFF
  PRIVACY          OFF
  DAY/NIGHT        COLOR
  SYNC             INIT
▶ COMM ADJ
  IMAGE ADJ
  END
```

⇨ **IMAGE ADJ:** Includes image quality or special function factors.
　❑ **FREEZE:** Use this feature to freeze capture an image.
　❑ **H-REV:** Use this feature to horizontally inverse the screen.
　❑ **V-REV:** Use this feature to vertically inverse the screen.
　❑ **SHARPNESS:** Increasing this value sharpens object edges.
　　　　Too high of a setting, however, produces noise
　　　　and may obscure the image.
　❑ **COLOR AGAIN:** Adjusting this value affects the chroma level only;
　　　　the burst level is unaffected.

⇨ **END:** evert back to the USER PRESET menu.

```
         SPECIAL SETUP
  USER PRESET      OFF
  PRIVACY          OFF
  DAY/NIGHT        COLOR
  SYNC             INIT
  COMM ADJ
▶ IMAGE ADJ
  END
```

7.4.8 RESET
　To reset your camera to factory default condition.

7.4.9 EXIT
　To finish setup menu.

8.0 Trobuleshooting
Refer to the following table if you are experiencing trouble with your camera.
Contact an authorized technician if the table does not provide you with a solution to the trouble

Problems	Troubleshooting
No display	• Check the power cable and the wiring between the camera and the monitor. • Ensure proper video cable connection (Video Out Jack).
Dim display	• The lens could be dirty. Clean with a soft, clean piece of cloth. • Adjust monitor settings. • Adjust camera position if exposed to a strong light source.
Dark display	• Adjust the monitor's contrast level. • Set the intermediate device, if in use, to 75Ω/ Hi-z (refer to p.11).
The camera is not functioning properly and its surface is hot	• Check the power source for compliance with specifications.
Motion Detection feature is not active.	• Ensure that the feature is set to ON.
Uneven colors Flickering	• Adjust and configure WHITE BAL. • The camera may be facing the sun or a fluorescent light. 　Adjust the position of the camera.
Can't select LL mode	• The camera may be connected to a DC power source. 　Connect to an AC power source.
LL is not function properly.	• Check external SYNC signal frequency (should be 60Hz for NTSC, 50Hz for PAL).

9.0 Dimensions
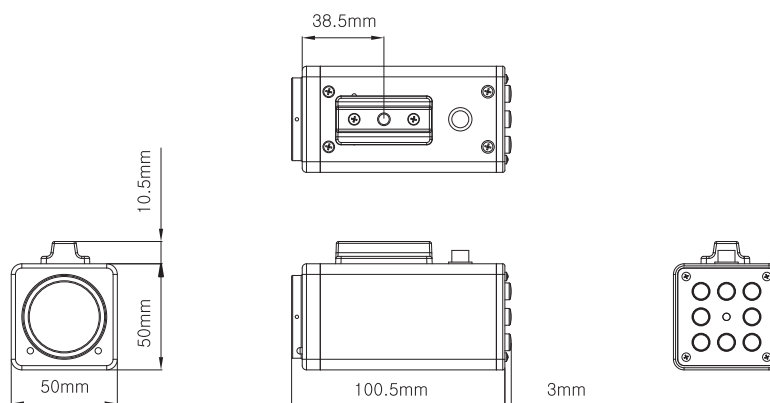
10.0 Specifications

		WDN-1003XP	
		NTSC MODEL	PAL MODEL
POWER	Input Voltage	DC 12V(±10%)	
	Input Current	290mA(Steady-state) 460mA(Zoom, Focus, Day&night motor operating)	
	Power Consumption	DC12V - 3.5W Normal - 5.5W Max (Zoom, Focus, Day&Night motor operating)	
CCD	Size	1/4 inch, Interline Transfer 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	Optics	10X, f=3.8 to 38.0mm(F1.8)	
	Min. Focus Distance	1,500mm	
	D. ZOOM	OFF/ON (X2 ~ X10)	
	Angle Field of view	H : Appr. 51.2°(Wide) to 5.58°(Tele)/V : Appr. 39.3°(Wide) to 4.27°(Tele)	
SYNC.	Scanning System	2:1 Interlace	
	Synchronization	Internal / Line-Lock	
	Frequency	H: 15.734KHz / V: 59.94Hz	H: 15.625KHz / V : 50.00Hz
ELEC.	Resolution	500 TV Lines(Min.) : Color (WIDE) / 570 TV Lines(Min.) : B/W (WIDE)	
	Video Output	CVBS : 1.0Vp-p/75Ω(VBS EXT)	
	S/N (Y signal)	50 dB (AGC Off, Weight ON)	
	Min. Illumination	0.7Lux@F1.8, 0.005Lux@F1.8(Sens-up), Color/0.02Lux@F1.8(B/W)	
	Backlight Compensation	LOW/MIDDLE/HIGH/OFF Selectable	
	Day & Night	Auto1, Auto2, COLOR, B/W(ICR)	
	Gain Control	Normal, High, OFF Selectable	
	White Balance	ATW(INDOOR(3,000K~10,500K), OUTDOOR(1,800K~10,500K))/AWC/MANUAL	

		WDN-1003XP	
		NTSC MODEL	PAL MODEL
ELEC.	Electronic shutter speed	AUTO (X128~1/60sec~1/120,000sec) Sens-up and Sens-up Limit is selectable, Flickerless	AUTO (X128~1/50sec~ 1/120,000sec) Sens-up and Sens-up Limit is selectable, Flickerless
	O.S.D	Built-In	
	Motion Detection	ON/OFF(4 Programmable Zone per Screen)	
	DNR	Low, Middle, High, Off	
	Focus	Auto / Manual / One push	
	Zoom Movement Speed	1.67sec : Wide to Tele	1.75sec : Wide to Tele
	IRIS Control	Auto, Manual	
	Lens Initialize	Built-In	
	Camera Title	OFF/ON (Displayed 15 characters)	
	Communication	RS485 External Control(TRX+,TRX-) 9600,19200, 38400 and 57600bps selectable PELCO-D PROTOCOL AVAILABLE	
	Privacy Function	ON/OFF(32Zones, It consists of 8Group 4Programmable Zone per Screen)	
	FLIP	Vertical, Horizontal, Vertical-Horizontal, OFF Selectable	
	Preset	8 Positions	
Operating Temperature/Humidity		-10°C to +50°C / 20% to 80% RH	
Dimension (WxHxD)		50 x 50 x 100.5mm	
Weight		260g	

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