



# OWNER'S MANUAL

## Color Video Camera

Please read this manual carefully before operating your set and retain it for future reference.

### MODEL

LCZ3750-DN / LCZ3750-DP

LCZ3750 series



MFL67260147



## 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.



This 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 product.

**FCC WARNING:** This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

### **REGULATORY INFORMATION: FCC Part 15**

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.

- A suitable conduit entries, knock-outs or glands shall be provided in the cable entries of this product in the end user.

- Caution: Danger of explosion if battery is incorrectly replaced. Replaced only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- Holes in metal, through which insulated wires pass, shall have smooth well rounded surfaces or shall be provided with brushings.

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.

### **Warning**

- Do not install this equipment in a confined space such as a bookcase or similar unit.
- Wiring methods shall be in accordance with the National Electric Code, ANSI/NFPA 70.
- 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.
- To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

### **Caution**

- This installation should be made by a qualified service person and should conform to all local codes.
- To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.
- The apparatus shall not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, shall be placed on the apparatus.

To disconnect power from mains, pull out the mains cord plug. When installing the product, ensure that the plug is easily accessible.

## Disposal of your old appliance



1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

**CE** LG Electronics hereby declares that this/ these product(s) is/are in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC, 2006/95/EC, and 2009/125/EC.

European Standards Centre:

Krijgsman 1, 1186 DM Amstelveen The Netherlands

# Important Safety Instructions

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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 are 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.



# Cautions for Safe Operation

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## Power Supply

This camera must always be operated a DC 12 V Certified/ Listed, class 2 power supply only.

## Handling of the unit

Be careful not to spill water or other liquids on the unit. Be cautious not to get combustible or metallic material inside the body. If used with foreign matter inside, the camera is liable to fail or to get cause of fire or electric shock.

- Remove dust or dirt on the surface of the lens with a blower.
- Use a dry soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent then wipe dry.
- Avoid the use of volatile solvents such as thinners, alcohol, benzene and insecticides.
- They may damage the surface finish and/or impair the operation of the camera.

## Operating and storage location

Avoid viewing a very bright object (such as light fittings) during an extended period. Avoid operating or storing the unit in the following locations.

- Extremely hot or cold places (operating temperature  $-10^{\circ}\text{C}$  to  $50^{\circ}\text{C}$ , however, we recommend that the unit be used within a temperature range of  $0^{\circ}\text{C}$  to  $45^{\circ}\text{C}$ )
- Damp or dust place
- Places exposed to rain
- Places subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

# Contents

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# Features

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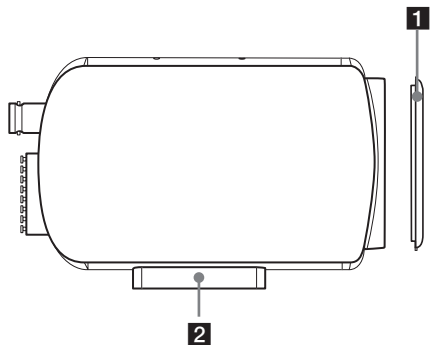
This color video camera is designed for use in monitoring system.

- High resolution and high sensitivity with a 4.5 mm (1/4 Type) Super HAD CCD II.
- High magnitude of zoom lens with optical x37, Digital x12 (Maximum x444)
- Auto Focus
- Auto White Balance
- Auto exposure with DC Iris control
- Day & Night function



## Part Names and Functions

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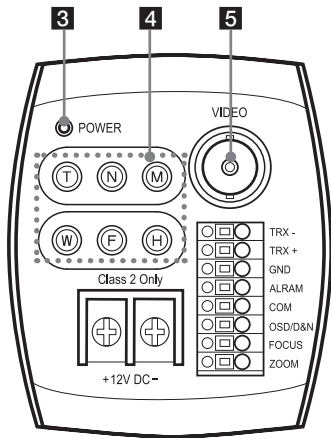
**1 Lens mount cap**

The cap is installed to protect the lens mount section. Remove the lens mount cap before install the camera. (sold separately)

**2 Camera installation bracket**

The bracket can be fixed at the top or bottom of the camera.

# Part Names and Functions



## 3 Power indicator

Comes on when the power to the camera is on.

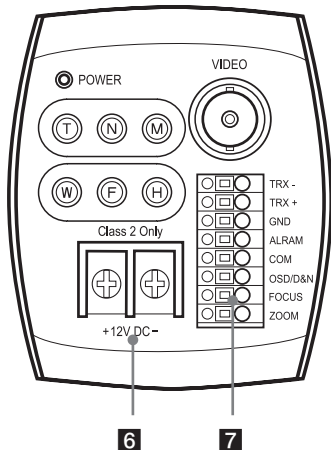
## 4 Control buttons

- T(TELE) button  
When push, picture is telephoto.
- N(NEAR) button  
In a manual situation, focus get near.
- M(MENU) button.  
If you want to set up a diverse function, you can push this button.
- W(WIDE) button  
When push, picture is wide angle.
- F(FAR) button  
In a manual situation, focus get far.
- H(HOT) button  
When you set the DAY/NIGHT mode to EXT, you can change the Day/Night mode using this button.

## 5 Video output connector (BNC type)

Connect this connector to a device such as a VCR or monitor with a VIDEO IN connector.

# Part Names and Functions



## 7 External Device Connectors

- **TRX -/+**  
Connect to an external controller of RS-485 format.
- **GND**  
Common GND.
- **Alarm Output Terminal (ALARM)**  
Connect to the alarm input of an external device.
- **COM (Common)**
- **OSD/D&N**
  - **OSD**: Connect the external controller to control the OSD function manually.
  - **D&N**: Connect the external controller to set the D&N function manually. If you use the external D&N function, you should set the DAY/NIGHT option to EXT on the camera setup menu.
- **FOCUS/ZOOM**  
Connect the external controller to control the Focus and Zoom function manually.

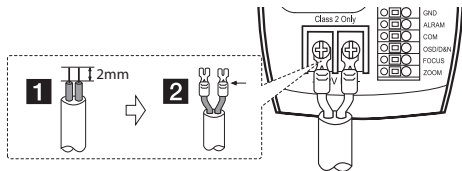
## 6 Power input terminal

Connect to an external power supply of DC 12V.

# Connections

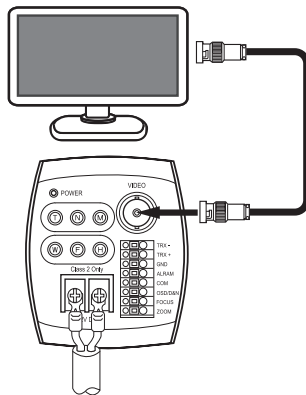
## Power connection

1. Remove the insulation on the power cable as illustrated.
2. Attach the terminal tips.
3. Connect to the 12V 1 UL Listed, Class 2 Power Supply only on the camera.



## Connecting Monitor

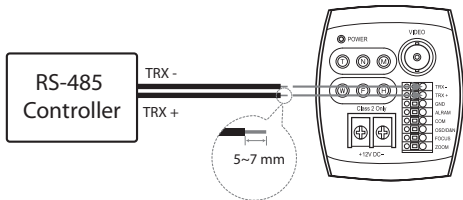
The video signal connection between the camera and the monitor or DVR.



# Connections

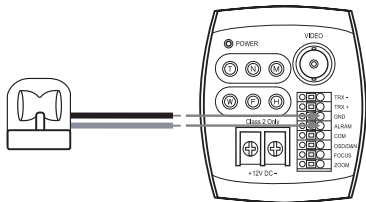
## Connecting RS-485 Controller

Connect to an external controller of RS-485 format.



## Alarm Connection

Connect an external device such as a buzzer or lamp to the ALARM terminal. When the camera detects motion, the alarm output signal is supplied to the connected external device.



## Contact Ratings

- Maximum load current is  $\pm 130\text{mA}$ .
- Do not connect any system or device that has over 40 Vp-p (DC 30 V) bias voltage on the contact terminal.

### Note:

Use a relay unit if the voltage or current of the connected device exceeds the ratings.

# Connections

## Day&Night function settings

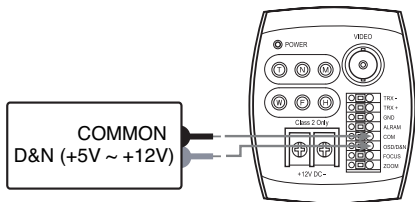
If you set the DAY/NIGHT option to EXT on the [CAMERA SET] menu, you can set the D&N function manually.

### In case that current D&N mode is set to Day mode

When you input the "+5V" signal to the OSD/D&N terminal and the COM is connected to grounds, the D&N mode is set to Night mode.

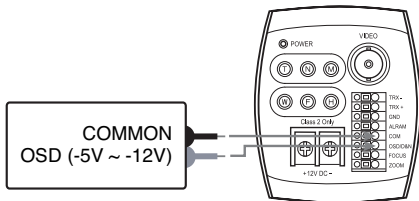
### In case that current D&N mode is set to Night mode

When you input the "+5V" signal to the OSD/D&N terminal and the COM is connected to ground, the D&N mode is set to the Day mode.



## OSD function settings

When you connect the "-5V" signal to the OSD/D&N terminal, the menu is displayed or the sub menu is displayed or the selected menu option is activated according to current conditions.



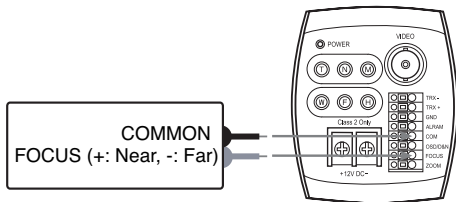
# Connections

## FOCUS and ZOOM Function Settings

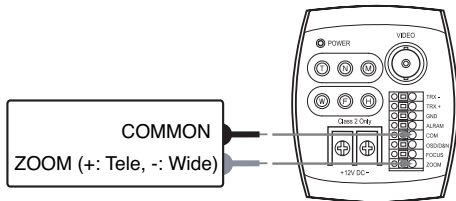
You can set the FOCUS and ZOOM function manually.

Using the external controller or receiver unit to control the FOCUS and ZOOM functions.

### FOCUS function



### ZOOM function

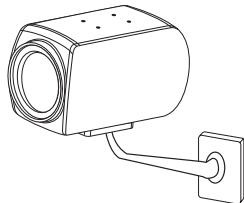
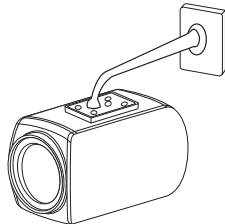
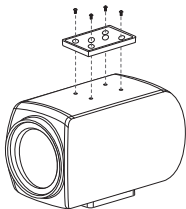


# Installation of Camera

The bracket can be installed to either the top or the bottom of the camera as desired. When changing the position of the camera mounting bracket, you should always reuse the screws that have been removed.

Note:

If using a camera mounting bracket, select a location that is strong enough to bear the full weight of the camera and the mounting bracket for long periods, and install the camera and mounting bracket securely.





# Menu Operation

The following table shows the list of menu items and options. You can adapt the camera to your requirements by setting up the respective items in these menus.

| Main Menu | Sub Menu    | Contents   |
|-----------|-------------|--|
| FOCUS     | FOCUS MODE  | ZOOM TRIG / MANUAL / AUTO / ONE PUSH                 |
|           | FOCUS DIST  | 50 CM, 1.8 M, 3 M, 6 M                               |
|           | ZOOM START  | x1 to x36  |
|           | ZOOM END    | x2 to x444   |
|           | ZOOM SPEED  | SLOW / MIDDLE/ QUICK                                 |
|           | ZTRK MODE   | AUTO / MANUAL/ AUTO ONLY                             |
|           | INITIAL SET |  |
|           | EXIT        | RET / TOP / END                                      |
| EXPOSURE  | IRIS        | AUTO / MANUAL  |
|           | AGC         | 1 to 10  |
|           | WDR/BLC     | OFF / WDR / BLC / HSBLC                              |
|           | BRIGHTNESS  | 0 to 100   |
|           | SHUTTER     | X512,,,,, x2, AUTO, OFF, A.FLK, 1/160,,,,, 1/120 000 |
|           | SENS-UP     | OFF, AUTO x2 to AUTO x128                            |
|           | INITIAL SET |  |
|           | EXIT        | RET / TOP / END                                      |

| Main Menu     | Sub Menu | Contents    |                       |         |
|---------------|----------|-------------|-----------------------|---------|
| WHITE BALANCE | AUTO     |             |                       |         |
|               | ONE PUSH |             |                       |         |
|               | MANUAL   | COLOR TEMP  | INDOOR,               | OUTDOOR |
|               |          | RED         | -100 to 100           |         |
|               |          | BLUE        | -100 to 100           |         |
|               |          | INITIAL SET |                       |         |
|               | EXIT     | RET/TOP/END |                       |         |
|               | ATW      |             |                       |         |
| DAY/NIGHT     | AUTO     | D/N LEVEL   | LOW/ MIDDLE/ HIGH     |         |
|               |          | DWELL TIME  | 5, 10, 15, 30, 60 sec |         |
|               |          | BURST MODE  | ON / OFF              |         |
|               |          | INITIAL SET |                       |         |
|               |          | EXIT        | RET/TOP/END           |         |
|               | DAY      |             |                       |         |
|               | NIGHT    |             |                       |         |
|               | EXT      |             |                       |         |

# Menu Operation

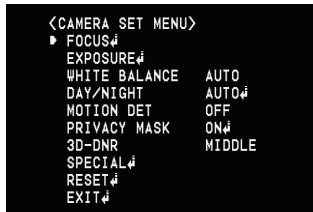
| Main Menu  | Sub Menu    | Contents    |             |                 |
|------------|-------------|-------------|-------------|-----------------|
| MOTION DET | OFF         |             |             |                 |
|            | ON          | SMART MD    | OFF / ON    |                 |
|            |             | REGIONAL MD | ZONE NUMBER | ZONE1 to ZONE4  |
|            |             |             | ZONE STATE  | ON, OFF         |
|            |             |             | WIDTH       | 2 to 8          |
|            |             |             | HEIGHT      | 2 to 6          |
|            |             |             | MOVE X      | 1 to 7          |
|            |             |             | MOVE Y      | 1 to 5          |
|            |             |             | MOTION ZOOM | OFF, x1,...,x37 |
|            |             |             | EXIT        | RET/TOP/END     |
|            |             | SENSITIVITY | 0 to 100    |                 |
|            | INITIAL SET |             |             |                 |
|            | EXIT        | RET/TOP/END |             |                 |

| Main Menu    | Sub Menu    | Contents    |                  |          |
|--------------|-------------|-------------|------------------|----------|
| PRIVACY MASK | OFF         |             |                  |          |
|              | ON          | MASK NUMBER | MASK1 to MASK8   |          |
|              |             | MASK STATE  | OFF / ON         |          |
|              |             | MASK COLOR  | RED, GREEN, BLUE | 0 to 255 |
|              |             |             | TRANSPARENCY     | 0 to 16  |
|              |             |             | RET / TOP / END  |          |
|              |             | WIDTH       | 2 to 320         |          |
|              |             | HEIGHT      | 2 to 240         |          |
|              |             | MOVE X      | 1 to 319         |          |
|              |             | MOVE Y      | 1 to 239         |          |
|              |             | RESET MASK  |                  |          |
|              | INITIAL SET |             |                  |          |
|              | EXIT        | RET/TOP/END |                  |          |

# Menu Operation

| Main Menu   | Sub Menu        | Contents  |             |
|-------------|-----------------|---|-------------|
| 3D-DNR      | OFF             |   |             |
|             | LOW             |   |             |
|             | MIDDLE          |   |             |
|             | HIGH            |   |             |
| SPECIAL     | CAMERA ID       | 0 to 255  |             |
|             | D-EFFECT        | OFF / MIRROR / V-FLIP / ROTATE  |             |
|             | COLOR           | OFF   |             |
|             |                 | ON  | COLOR LEVEL |
|             | FREEZE          | OFF / ON  |             |
|             | SHARPNESS       | 0 to 68   |             |
|             | STABILIZER      | OFF / ON  |             |
|             | OSD             | OFF   |             |
|             |                 | ON  | USER TITLE  |
|             |                 |   | ZOOM MAG    |
|             |                 |   | FUNCTION    |
|             |                 |   | CAMERA ID   |
|             | LANGUAGE        | ENG (The supported language can be different depending on the model.) |             |
| INITIAL SET |                 |   |             |
| EXIT        | RET / TOP / END |   |             |
| RESET       | FACTORY RESET   |   |             |
|             | S/W VERSION     |   |             |
|             | REBOOT          |   |             |
|             | PROTOCOL        | LG / PELCO-D / PELCO-P  |             |
|             | EXIT            | RET / TOP / END   |             |
| EXIT        |                 |   |             |

## General Operation




1. Press **[M]** button on the rear of the camera. The setup menu screen appears on the monitor.
2. Use **[T]** or **[W]** button to select an option then press **[M]** button on the rear of the camera. Submenu appears on the monitor.
3. Use **[T]** or **[W]** button to select a submenu option.
4. Use **[N]** or **[F]** button to select a value.
5. Select **[EXIT]** option then press **[M]** to exit the setup menu. In the submenu, use **[T]** or **[W]** button to select the **[EXIT]** then use **[N]** or **[F]** button to select a mode

# Menu Operation

and press **[M]** to exit the setup menu.

- **RET**: Return to the previous.
- **TOP**: Return to the CAMERA SETTING menu screen.
- **END**: Exit the setup menu.

## Notes:

- **[T]** button: Use to move upper direction on the menu screen.
- **[W]** button: Use to move lower direction on the menu screen.
- **[N]** button: Use for increase the value of the option.
- **[F]** button: Use for decrease the value of the option.
- **[M]** button: Executes selections and displays a submenu for an item with the  mark.

## Focus settings

|                       |                   |                          |                  |
|-----------------------|-------------------|--------------------------|------------------|
| <CAMERA SET MENU>     |                   | <FOCUS MENU>             |                  |
| ▶ FOCUS <sup>⚡</sup>  |                   | ▶ FOCUS MODE             | ZOOM TRIG        |
| EXPOSURE <sup>⚡</sup> |                   | FOCUS DIST               | 50CM             |
| WHITE BALANCE         | AUTO              | ZOOM START               | X1               |
| DAY/NIGHT             | AUTO <sup>⚡</sup> | ZOOM END                 | X444             |
| MOTION DET            | OFF               | ZOOM SPEED               | QUICK            |
| PRIVACY MASK          | ON <sup>⚡</sup>   | ZTRK MODE                | AUTO             |
| 3D-DNR                | MIDDLE            | INITIAL SET <sup>⚡</sup> |                  |
| SPECIAL <sup>⚡</sup>  |                   | EXIT                     | RET <sup>⚡</sup> |
| RESET <sup>⚡</sup>    |                   |                          |                  |
| EXIT <sup>⚡</sup>     |                   |                          |                  |

The camera adjusts the focus automatically by sensing the center of the picture.

### FOCUS MODE Setting

Select **[FOCUS MODE]** option on the **[FOCUS]** menu, then select the following mode.

- **ZOOM TRIG**: The focus is activated manually. If you change the zoom, the focus is activated Automatically and then the focus mode is automatically changed to manual mode.
- **MANUAL**: Focus is activated only when the **N** (NEAR) or **F** (FAR) keys on the camera is pressed.

# Menu Operation

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- **AUTO:** Auto-focus is activated automatically.
- **ONE PUSH:** The focus is activated manually. If the camera is received auto-focus command, the camera is activated Auto-focus mode and the focus is set automatically and then the focus mode is automatically changed to manual mode.

## FOCUS DISTANCE setting

Selects the minimum shooting distance for the focus.

Select [FOCUS DIST] option on the [FOCUS] menu, then select a focus distance value.

## ZOOM START setting

You can set the zoom start position of the camera.

When the zoom function is operated, the zoom always will start at the selected zoom start position.

Select [ZOOM START] option on the [FOCUS] menu, then set a zoom start position.

## ZOOM END setting

You can set the zoom end position of the camera. If you set the zoom end position, the zoom is operated up to the selected zoom end position.

Select [ZOOM END] option on the [FOCUS] menu, then set the zoom end position.

## ZOOM SPEED setting

Selects a zoom speed.

Select [ZOOM SPEED] option on the [FOCUS] menu, then select a zoom speed.

## Zoom Tracking Mode setting

Selects a zoom tracking mode. Zoom tracking means focused zooming state.

Select [ZTRK MODE] option on the [FOCUS] menu, then select a zoom tracking mode.

If the FOCUS MODE is set to [ATUO], the ZTRK MODE is set to [AUTO ONLY] and you can not change the ZTRK MODE.

# Menu Operation

## Exposure Settings

|                            |                        |
|----------------------------|------------------------|
| <CAMERA SET MENU>          | <EXPOSURE MENU>        |
| FOCUS $\uparrow$           | IRIS AUTO              |
| ▶ EXPOSURE $\uparrow$      | AGC 5                  |
| WHITE BALANCE AUTO         | WDR/BLC OFF            |
| DAY/NIGHT AUTO $\uparrow$  | BRIGHTNESS 50          |
| MOTION DET OFF             | SHUTTER AUTO           |
| PRIVACY MASK ON $\uparrow$ | SENS-UP OFF            |
| 3D-DNR MIDDLE              | INITIAL SET $\uparrow$ |
| SPECIAL $\uparrow$         | EXIT RET $\uparrow$    |
| RESET $\uparrow$           |                        |
| EXIT $\uparrow$            |                        |

### IRIS setting

Select the desired lens iris value for camera exposure.

Select [IRIS] option on the [EXPOSURE] menu, then select a value.

- AUTO: The lens iris is set automatically.
- MANUAL: Use [**N**] or [**F**] button to select the DC Iris level.

### AGC (Automatic Gain Control) setting

If the images are too dark, change the maximum [AGC] value to make the images lighter.

1. Select [AGC] option on the [EXPOSURE] menu.
2. Use [**N**] or [**F**] button to select a value.

### WDR/BLC setting

Use WDR/BLC option to set the options for BLC or WDR camera.

1. Select [WDR/BLC] option on the [EXPOSURE] menu.
  2. Use [**N**] or [**F**] button to select a mode then press [**M**].
- WDR: WDR (Wide dynamic range) feature can be very helpful to cope with very challenging lighting conditions. It is capable of capturing both of the dark part and bright part and combining the differences into a scene to generate a highly realistic image as original scene. Set the WDR limit.
    - ACE (Adaptive Contrast Enhancement) : This function is used when you want to display dark areas of WDR brightly.

# Menu Operation

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- BLC: Camera's backlight compensation feature helps alleviate issues of visibility in high contrast areas. Set the BLC limit.
- HSBLC: Use for masking brightness of the specific area to view the subject more clearly. The HSBLC mode is automatically activated only in low luminance scene.
  - AREA SETTING: Use **[N]** or **[F]** button to select a area then use **[T]** or **[W]** button to select a ON or OFF. Press **[M]** to exit the area setting menu.
  - GRAY SCALE: Use **[N]** or **[F]** button to select a gray scale.
  - HS LEVEL: Use **[N]** or **[F]** button to select a bright level.
  - MASK STATE: Use **[N]** or **[F]** button to select [ON] or [OFF].  
If you set the MASK STATE to ON, the mask function is activate only when the HSBLC is activated by auto mode.
- OFF: Not used.

## BRIGHTNESS setting

You can increase the brightness of the darkened video. If you set the brightness to lower value, the image is darkened. If you set the brightness to higher value, the image gets bright.

1. Select [BRIGHTNESS] option on the [EXPOSURE] menu.
2. Use **[N]** or **[F]** button to set the bright level.

## SHUTTER (Shutter Speed) setting

Select the desired shutter speed for camera exposure.

You can change the shutter speed to higher speed to capture fast-moving subjects, though the image becomes darker.

1. Select [SHUTTER] option on the [EXPOSURE] menu.
2. Use **[N]** or **[F]** button to set shutter speed.

# Menu Operation

## SENS-UP setting

If pictures are not clear due to darkness, use for increase the sensitivity of picture.

1. Select [SENS-UP] option on the [EXPOSURE] menu.
2. Use [**N**] or [**F**] button to set the SENS-UP limit

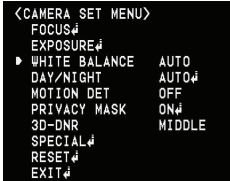
To setting the SENS-UP function, select the [AUTO] on the [SHUTTER].

### **Note:**

If you set to one of the SHUTTER options except AUTO on the [SHUTTER] menu, the [SENS-UP] setting is not available and [---] mark is displayed.

## White Balance setting

Select the method by which the camera shifts its output colors to compensate for the color of a light source.



1. Select [WHITE BALANCE] option on the [CAMERA SET] menu.
2. Use [**N**] or [**F**] button to select a mode then press [**M**].
  - **AUTO:** In this mode, the color temperature range for the proper white balance is approximately 2 700 K to 5 400 K. Proper white balance may not be obtained under the following conditions:
    - When the color temperature is out of the 2 700 K to 5 400 K range.



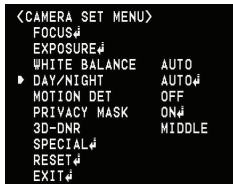
# Menu Operation

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- When the scene contains mostly high color temperature objects, such as a blue sky or sunset.
- When the scene is dim.
- ONE PUSH: If you select the ONE PUSH mode, you will be able to set up the White Balance automatically using **[M]** button.
- MANUAL: You can set the white balance options manually.
  - COLOR TEMP: Use **[N]** or **[F]** button to select a function.
    - > INDOOR: The color temperature range for the proper white balance is approximately 3 200 K.
    - > OUTDOOR: The color temperature range for the proper white balance is approximately 5 100 K.
  - RED: Set the desired red value.
  - BLUE: Set the desired blue value.
- ATW (Auto-Tracing White Balance): In this mode, the color temperature range for the proper white balance is approximately 1 800 K to 10 500 K. Proper white balance may not be obtained under the following conditions:
  - When the color temperature is out of the 1 800 K to 10 500 K range.
  - When the scene contains mostly high color temperature objects, such as a blue sky or sunset.
  - When the scene is dim.

# Menu Operation

## Day/Night setting



1. Select [DAY/NIGHT] option on the [CAMERA SET] menu.
  2. Use [N] or [F] button to select mode for day/night function.
- AUTO: You will be able to change the Day/Night mode automatically.

### Note:

If you set the AGC to 0 or the SHUTTER is set to one of the SHUTTER options except AUTO on the [EXPOSURE] menu, the AUTO mode of the DAY/NIGHT function is not available and [---] mark is displayed.

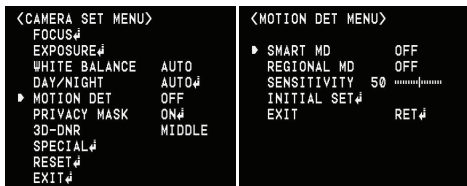
- D/N LEVEL: Use [N] or [F] button to select a level.

- DWELL TIME: Use [N] or [F] button to select a dwell time.
- BURST MODE: Select [ON] or [OFF] to set the color burst in Night status.
- DAY: Color mode enabled.
- NIGHT: Black-and-white mode enabled.
- EXT : Switches between color picture and black-and-white picture when an external day/night switching signal is received.

# Menu Operation

## Motion Detection setting

The motion detection detects the moving objects in the scene by monitoring changes in brightness level. You can select the level of sensitivity for motion detection to 4 zone.



1. Select [MOTION DET] option on the [CAMERA SET] menu.
  2. Use [N] or [F] button to select a [ON] and press [M]. The MOTION DETECTION menu appears.
    - SMART MD : You can detect the movement of objects easily by displaying motion mask.
    - REGIONAL MD : Use [N] or [F] button to select [ON] then press [M].
  3. Use [SENSITIVITY] option to obtain the optimum detection level.
  4. Select the motion zoom level. If you set the motion zoom, the camera is activated according to the selected motion zoom level and after some time passes, it returns to the previous zoom level when the motion is detected.
- Use [N] or [F] button to select a zone number on the [ZONE NUMBER].
  - Use [N] or [F] button to set up the ON or OFF on the ZONE STATE.
  - Use [T] or [W] to select an option then use [N] or [F] button to adjust the option.
    - > HEIGHT: Enlarge or decrease the vertical size of the mask.
    - > WIDTH: Enlarge or decrease the horizontal size of the mask.
    - > MOVE Y: Moves vertical position of the mask.
    - > MOVE X: Moves horizontal position of the mask.
    - > MOTION ZOOM: Select the motion zoom.

# Menu Operation

## Privacy Mask setting

|  |  |
|--|--|
| <pre>&lt;CAMERA SET MENU&gt; FOCUS EXPOSURE WHITE BALANCE    AUTO DAY/NIGHT        AUTO MOTION DET       OFF ▶ PRIVACY MASK    ON 3D-DNR           MIDDLE SPECIAL RESET EXIT</pre> | <pre>&lt;PRIVACY MASK MENU&gt; ▶ MASK NUMBER    MASK1 MASK STATE       ON MASK COLOR WIDTH            320 HEIGHT           240 MOVE X           160 MOVE Y           120 RESET MASK INITIAL SET EXIT             RET</pre> |
|--|--|

This function is aiming at the protection of personal privacy, selecting a screen part black not to be displayed in the screen. Up to 8 zones can be registered.

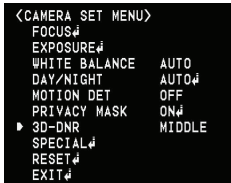
1. Select [PRIVACY MASK] option on the [CAMERA SET] menu.
2. Use [N] or [F] button to select a [ON] and press [M]. The PRIVACY MASK menu appears.
3. Use [N] or [F] button to select a zone number on the [MASK NUMBER] option.
4. Use [N] or [F] button to set up the ON or OFF on the [MASK STATE] option. If you already registered the mask zone and set to ON, the mask zone box appears on the monitor.
5. Select [RESET MASK] and press [M]. If you register the mask zone for the first time, the mask zone box appears on the center of the monitor. If you already registered mask zone, it will be returned to its initial state and appear on the center of the monitor.
6. Use [N] or [F] button to select the color of the mask zone box on the [MASK COLOR] option.
7. Use [T] or [W] to select an option then use [N] or [F] button to adjust the option
  - WIDTH: Enlarge or decrease the horizontal size of the mask zone box.
  - HEIGHT: Enlarge or decrease the vertical size of the mask zone box.
  - MOVE X: Moves horizontal position of the mask zone box.
  - MOVE Y: Moves vertical position of the mask zone box.

# Menu Operation

## Notes:

- If you want to reset the mask zone position, select RESET MASK option and press [M] button.
- The parts with the registered mask numbers from MASK1 to MASK4 have the same color. (So do the parts with the numbers from MASK5 to MASK8). If you change the mask color, the registered mask color will be changed automatically with the same color for each of group (MASK1 to 4, MASK5 to 8).

## 3D-DNR setting



1. Select [3D-DNR] option.  
If pictures are not clear due to brightness, use for reduce the noise of picture.
2. Use [N] or [F] button to select a option.

## Notes:

- If you set the AGC to 0 on the [EXPOSURE] menu, the [3D-DNR] function is not available.
- When you use this function, the afterimage may occur.

# Menu Operation

## Special menu settings

|                   |        |                |         |
|-------------------|--------|----------------|---------|
| <CAMERA SET MENU> |        | <SPECIAL MENU> |         |
| FOCUS             |        | ▶ CAMERA ID    | 255     |
| EXPOSURE          |        | D-EFFECT       | OFF     |
| WHITE BALANCE     | AUTO   | COLOR          | ON      |
| DAY/NIGHT         | AUTO   | FREEZE         | OFF     |
| MOTION DET        | OFF    | SHARPNESS      | 34      |
| PRIVACY MASK      | ON     | STABILIZER     | OFF     |
| 3D-DNR            | MIDDLE | OSD            | OFF     |
| ▶ SPECIAL         |        | LANGUAGE       | ENGLISH |
| RESET             |        | INITIAL SET    |         |
| EXIT              |        | EXIT           | RET     |

### Camera Identification setting

You can use the camera identification (CAMERA ID) to assign a number to the camera.

1. Select [CAMERA ID] option on the [SPECIAL] menu.
2. Use [N] or [F] to select a CAMERA ID.

### D-EFFECT (Digital effect) setting

You can select the digital effect.

1. Select [D-EFFECT] option on the [SPECIAL] menu.
2. Use [N] or [F] button to select a digital effect.
  - MIRROR: Turn on the mirror effect.
  - V-FLIP: Flip the picture vertically.
  - ROTATE: Rotate the picture. (180°)
  - OFF: Turn off the digital effect.

### Color setting

You can switch the displayed picture to grayscale or color.

1. Select [COLOR] option on the [SPECIAL] menu.
2. Use [N] or [F] button to change a color effect.
  - ON: To display the picture with color. Select ON and Press [M] to display the submenu. You can adjust the color level using the [N] or [F] button.
  - OFF: To display the picture with grayscale.

# Menu Operation

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## Freeze setting

1. Select [FREEZE] option on the [SPECIAL] menu.
2. Use [**N**] or [**F**] button to set up the ON or OFF.

## Sharpness setting

Sharpens the image outline.

1. Select [SHARPNESS] option on the [SPECIAL] menu.
2. Use [**N**] or [**F**] button to change a adjust the option. If you set the sharpness value to higher, the image outline becomes sharp. If you set to lower value, the image outline becomes dim.

## Stabilizer setting

The image stabilizer function minimizes the appearance of shaky images caused by low-frequency vibration. This function is useful for outdoor surveillance.

Select [STABILIZER] option and set to ON or OFF.

### **Note:**

If you set the [STABILIZER] to ON, the Digital zoom is set to [x1.1] automatically.

## OSD setting

You can set the Function On-Screen Display options using the [OSD] menu. The Function On-Screen Display of this camera can be turned on or off.

1. Select [OSD] option on the [SPECIAL] menu.
2. Use [**N**] or [**F**] button to select a [ON] and press [**M**]. The OSD menu appears.
3. Use [**T**] or [**W**] to select an option then use [**N**] or [**F**] button to set the option.
  - ON: Displays the Function OSD on the screen.
  - OFF: The Function OSD does not appear on the screen.
4. User title setting: You can use the camera identification to assign a number and character to the camera. The USER TITLE is displayed on the upper left of the screen. To disappear the user title, select [OFF].
  - Select [USER TITLE] option on the [OSD] option.
  - Use [**N**] or [**F**] button to select a [ON] then press [**M**]. The USER TITLE menu appears.

# Menu Operation



- Use **[T]**, **[W]**, **[N]** or **[F]** button to select a character or number.
  - > CLR: If you enter the wrong code, select CLR then press **[M]**.
  - > POS: Use **[N]** or **[F]** button to move position of USER TITLE on the screen.
  - > END: Confirm your selection.
  - > **1** (Blank): Insert a space at the cursor position.
  - > **←** / **→**: Moves cursor to left or right.

## Language setting

Select a language for setup menu and information display.

## Reset settings



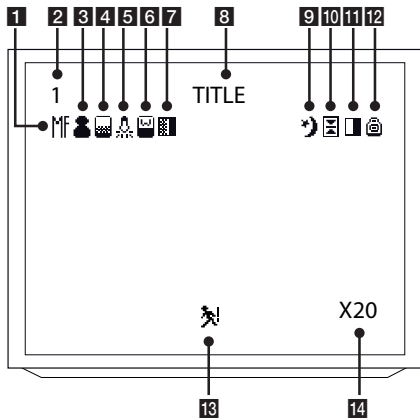
1. Select **[RESET]** option.
2. Press **[M]** button and the RESET menu appears.
3. Use **[T]** or **[W]** to select option.
  - FACTORY RESET: Clear certain settings and information and return to factory default settings.
  - S/W VERSION: Displays the software version on the monitor.
  - REBOOT: Reboot the camera system.
  - PROTOCOL: Select the protocol for the camera communication among the LG, PELCO-D and PELCO-P.
4. Press **[M]** to confirm your selection.



# Reference








## On Screen Display






Some of these functions will be displayed every time the camera is operated.



| Function |                     | OSD Format   | Description             |
|----------|---------------------|--------------|-------------------------|
| 1        | Focus Mode          | None Display | Zoom Trigger Mode       |
|          |                     | AF           | Auto Mode               |
|          |                     | MF           | Manual Mode             |
|          |                     | AFi          | One Push Mode           |
| 2        | Camera ID           | 0 to 255     | Displays the camera ID. |
| 3        | Manual Focus Action |              | Focus Near              |
|          |                     |              | Focus Far               |




# Reference

| Function |                             | OSD Format  | Description                           |
|----------|-----------------------------|---|---------------------------------------|
| 4        | White Balance Mode          | None Display  | Auto or ATW Mode                      |
|          |                             |  | Manual Mode                           |
|          |                             |  | One Push Mode                         |
| 5        | White Balance Manual Mode   |  | Indoor                                |
|          |                             |  | Outdoor                               |
| 6        | Backlight Compensation Mode | None Display  | Backlight Compensation is turned off. |
|          |                             |  | WDR On                                |
|          |                             |  | BLC On                                |
|          |                             |  | HSBLC On                              |

| Function |                  | OSD Format  | Description           |
|----------|------------------|---|-----------------------|
| 7        | 3D-DNR           | None Display  | 3D-DNR is turned off. |
|          |                  |  | 3D-DNR is turned on.  |
| 8        | User Title       | Text: A to Z, 0 to 9, '-', '/', ''  | User Title            |
| 9        | Day & Night Mode | None Display  | Day Mode              |
|          |                  |  | Night Mode            |
| 10       | D-Effect Status  | None Display  | D-Effect Off          |
|          |                  |  | V-Flip                |
|          |                  |  | Mirror                |
|          |                  |  | Rotate                |

# Reference

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| Function |                         | OSD Format  | Description                             |
|----------|-------------------------|---|---|
| 11       | Color On/Off Status     | None Display  | Color On                                |
|          |                         |  | Color Off                               |
| 12       | Freeze On/Off Status    | None Display  | Freeze Off                              |
|          |                         |  | Freeze On                               |
| 13       | Motion Detection Status |  | Displays when the motion is detected.   |
| 14       | Zoom Display            | X1 to X444  | Optical Zoom: 37X,<br>Digital Zoom: 12X |

# Reference

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## RS-485 Protocol (Optional)

### Data Communication Format

- Data Length: 1 Byte (8 Bit)
- Start/Stop Bit: 1 Bit
- Parity Bit: None
- Baud rate: 9,600 bps

### Format

| Byte 1 | Byte 2 | Byte 3    | Byte 4 | Byte 5            | Byte 6   | Byte 7 |
|--------|--------|-----------|--------|-------------------|----------|--------|
| 0xE5   | 0x87   | Camera ID | 0x60   | Key In or Key Out | Key Code | *C.S.  |

\*C.S. = Check Sum

- The data of total 7 bytes is transmitted from the external RS-485 device to the camera.
- Byte 7 : The value of Check Sum from 'Byte 1 ' to 'Byte 6 '.

# Reference

## Commands

| Function          | Command |                      | Description  |
|-------------------|---------|----------------------|--|
| Menu              | Key In  | E5 87 ID 60 00 14 CS | 1) OSD On Key Action<br>2) When OSD is being displayed, Enter into the submenu or execute the menu item.       |
|                   | Key Out | E5 87 ID 60 FF 14 CS |  |
| Tele (Menu Up)    | Key In  | E5 87 ID 60 00 08 CS | 1) Menu Defined Speed Tele Key Action<br>2) When OSD is being displayed, select upper menu item.               |
|                   | Key Out | E5 87 ID 60 FF 08 CS |  |
| Wide (Menu Down)  | Key In  | E5 87 ID 60 00 04 CS | 1) Menu Defined Speed Wide Key Action<br>2) When OSD is being displayed, select lower menu item.               |
|                   | Key Out | E5 87 ID 60 FF 04 CS |  |
| Near (Menu Right) | Key In  | E5 87 ID 60 00 02 CS | 1) Menu Defined Speed Near Key Action<br>2) When OSD is being displayed, select option item in the right side. |
|                   | Key Out | E5 87 ID 60 FF 02 CS |  |
| Far (Menu Left)   | Key In  | E5 87 ID 60 00 01 CS | 1) Menu Defined Speed Far Key Action<br>2) When OSD is being displayed, select option item in the left side.   |
|                   | Key Out | E5 87 ID 60 FF 01 CS |  |

**Note:**

You must enter the Key out command after the Key input command.

# Reference

## Specifications

| ITEM                     | LCZ3750-DN   | LCZ3750-DP         |
|--------------------------|--|--------------------|
| Signal System            | NTSC   | PAL                |
| Total Pixels Number      | 520 000 Pixels   | 610 000 Pixels     |
| Effective Pixels Number  | 480 000 Pixels   | 570 000 Pixels     |
| Image Device             | 4.5 mm (1/4 Type) Super HAD CCD II                                   |                    |
| ISP                      | XDI-II   |                    |
| Lens                     | x37 Zoom, F 1.5 (Wide End), F 4.1 (Tele End), f = 3.5 mm to 129.5 mm |                    |
| Digital Zoom             | x 12   |                    |
| IRIS Control             | Auto / Manual  |                    |
| Sync. System             | Internal   |                    |
| Scanning Frequency (H/V) | 15.734 kHz / 59.94 Hz  | 15.625 kHz / 50 Hz |
| Horizontal Resolution    | 600 TV Lines   |                    |

## Reference

| ITEM                             |       | LCZ3750-DN                                      | LCZ3750-DP        |
|----------------------------------|-------|---|-------------------|
| S/N Ratio                        |       | 50 dB (AGC Off)                                 |                   |
| Minimum Illumination<br>(30 IRE) | B/W   | 0.01 lx (Sens-up OFF), 0.000 01 lx (Sens-up ON) |                   |
|                                  | Color | 0.2 lx (Sens-up OFF), 0.003 lx (Sens-up ON)     |                   |
| Video Output Signal              |       | 1 Vp-p Composite (75 Ω)                         |                   |
| Day & Night                      |       | AUTO / DAY / NIGHT / EXT                        |                   |
| Backlight                        |       | WDR / BLC / HSBLC / OFF                         |                   |
| DNR                              |       | 3D-DNR  |                   |
| Electronic Shutter Speed         |       | 1/60 to 1/120 000                               | 1/50 to 1/120 000 |
| White Balance                    |       | AUTO / ATW / ONE PUSH / MANUAL                  |                   |
| Control Method                   |       | RS-485  |                   |
| Power Source                     |       | DC 12 V   |                   |
| Power Consumption                |       | 3.6 W   |                   |

# Reference

| ITEM                  | LCZ3750-DN                 | LCZ3750-DP |
|-----------------------|----------------------------|------------|
| Operation Temperature | -10 °C to 50 °C            |            |
| Storage Temperature   | -20 °C to 60 °C            |            |
| Operation Humidity    | 0 % RH to 80 % RH          |            |
| Storage Humidity      | 0 % RH to 90 % RH          |            |
| Weight                | 520 g                      |            |
| Dimension (H x V x D) | 64 mm x 78.6 mm x 118.2 mm |            |



