



OWNER'S MANUAL

Color Video Camera

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

MODEL

LCZ2850-DN/LCZ2850-DP

LCZ2850 series



MFL67409406



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

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

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 °C to 50 °C, however, we recommend that the unit be used within a temperature range of 0 °C to 45 °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

Features	8
-----------------------	----------

Part Names and Functions	9
---------------------------------------	----------

Connections	11
--------------------------	-----------

Power connection.....	11
-----------------------	----

Connecting Monitor	11
--------------------------	----

Menu Opertaion	16
-----------------------------	-----------

General Operation.....	18
------------------------	----

Focus settings	19
----------------------	----

Exposure Settings.....	21
------------------------	----

White Balance setting	23
-----------------------------	----

Day/Night setting	25
-------------------------	----

Motion Detection setting	26
--------------------------------	----

Privacy Mask setting	27
----------------------------	----

3D-DNR setting.....	28
---------------------	----

Special menu settings.....	29
----------------------------	----

Reset settings.....	32
---------------------	----

Reference	33
------------------------	-----------

On Screen Display.....	33
------------------------	----

RS-485 Protocol (Optional).....	35
---------------------------------	----

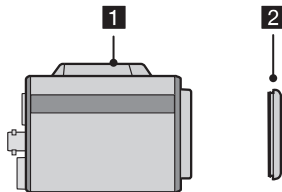
Specifications	37
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Features

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 x28, Digital x12 (MAX x336)
- Auto Focus
- Auto White Balance
- Auto exposure with DC Iris control
- Day & Night function

Part Names and Functions

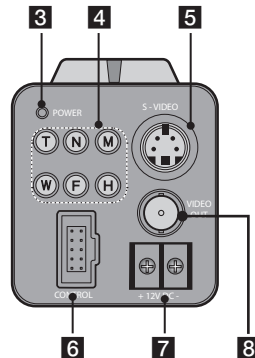


1 Camera installation bracket

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

2 Lens mount cap

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



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

Part Names and Functions

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 (S-Video type)

Connect to the S-Video in connector of a monitor.

6 CONTROL connector

Interface of camera control jack (10 Pin Din Jack Type)

7 Power input terminal

Connect to an external power supply of DC 12V.

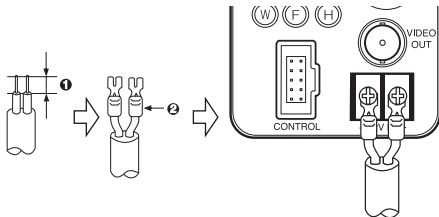
8 Video output connector (BNC type)

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

Connections

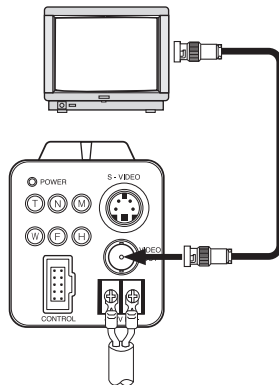
Power connection

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



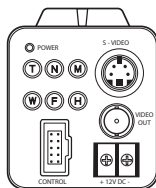
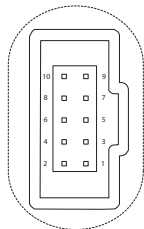
Connecting Monitor

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



Connections

You can control the PTZ and RS-485 by a pin terminal on the back side of the camera.



CN 312	
1	ZOOM
2	COM
3	FOCUS
4	MENU/HOT
5	AD2
6	AD1
7	NC
8	TR-
9	TR+
10	GND

Zoom & Focus
DC Control

A/D Key 2 input

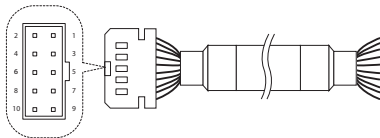
A/D Key 1 input

For RS-485 Control

Common GND

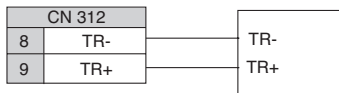
* Wire color	
1	Green
2	Yellow
3	White
4	Red
5	Blue
6	Brown
7	Orange
8	Purple
9	Gray
10	Black

* is the color of the cable. (If it is offered)

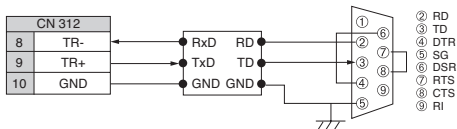


Connections

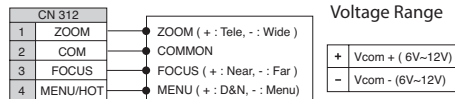
- RS-485 Connect



- RS-232C TTL Connect (Option)



- Zoom & Focus DC Control connect



Receiver Unit / Controller

Voltage Range

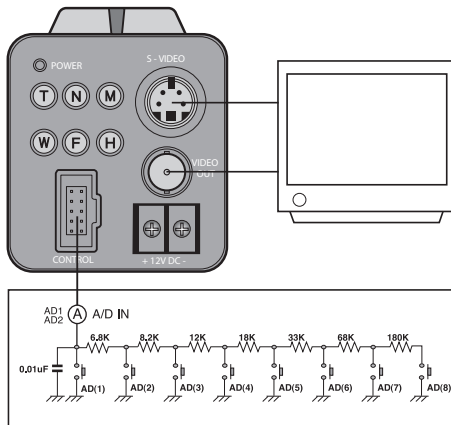
+	Vcom + (6V~12V)
-	Vcom - (6V~12V)

Connections

Schematic diagram of wired remote-control.

No	Function
AD(1)	Menu
AD(2)	TELE
AD(3)	WIDE
AD(4)	FOCUS NEAR
AD(5)	FOCUS FAR
AD(6)	NO
AD(7)	NO
AD(8)	NO

No	Function
AD(1)	NO
AD(2)	NO
AD(3)	NO
AD(4)	NO
AD(5)	NO
AD(6)	NO
AD(7)	NO
AD(8)	NO

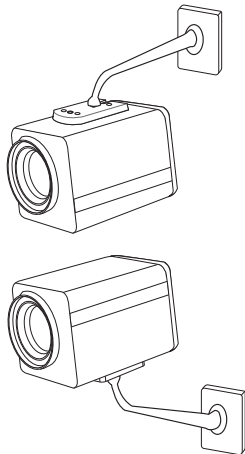


Connections

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 Opertaion

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	AUTO / ONE PUSH / ZOOM TRIG / MANUAL
	FOCUS DIST	50CM, 1M, 3M, 5M
	ZOOM START	x1 to x27
	ZOOM END	x2 to x336
	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	ATW		
	AUTO		
	ONE PUSH		
	MANUAL	COLOR TEMP	INDOOR, OUTDOOR
		RED	-100 to 100
		BLUE	-100 to 100
		INITIAL SET	
		EXIT	RET/TOP/END
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

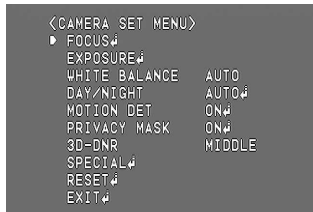
Main Menu	Sub Menu	Contents			
MOTION DET	OFF				
	ON	SMART MD	OFF / ON		
		REGIONAL MD	ZONE NUMBER	ZONE1 to ZONE4	
			ZONE STATE	ON, OFF	
			WIDTH	2 to 8	
			HEIGHT	2 to 6	
			MOVE X	1 to 7	
			MOVE Y	1 to 5	
			MOTION ZOOM	OFF, x1,...,x28	
			EXIT	RET/TOP/END	
		SENSITIVITY	0 to 100		
		INITIAL SET			
		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/V-FLIP/ MIRROR/ 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 		▶ FOCUS MODE	ZOOM TRIG
EXPOSURE 		FOCUS DIST	50CM
WHITE BALANCE	AUTO	ZOOM START	X1
DAY/NIGHT	AUTO 	ZOOM END	X336
MOTION DET	ON 	ZOOM SPEED	QUICK
PRIVACY MASK	ON 	ZTRK MODE	AUTO
3D-DNR	MIDDLE	INITIAL SET 	
SPECIAL 		EXIT	RET 
RESET 			
EXIT 			

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.

- **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.

Menu Operation

- 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.

Focus Distance setting

Selects the minimum shooting distance for the focus.

Select [FOCUS DISTANCE] 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		IRIS	AUTO
▶ EXPOSURE		AGC	5
WHITE BALANCE	AUTO	WDR/BLC	OFF
DAY/NIGHT	AUTO	BRIGHTNESS	50
MOTION DET	ON	SHUTTER	AUTO
PRIVACY MASK	ON	SENS-UP	OFF
3D-DNR	MIDDLE	INITIAL SET	
SPECIAL		EXIT	RET
RESET			
EXIT			

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

- 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

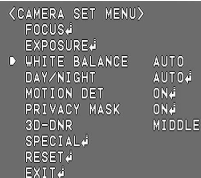
To setting the SENS-UP function, select the [AUTO] on the [SHUTTER].

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.



```
<CAMERA SET MENU>
FOCUS
EXPOSURE
▶ WHITE BALANCE    AUTO
DAY/NIGHT          AUTO
MOTION DET         ON
PRIVACY MASK       ON
3D-DNR             MIDDLE
SPECIAL
RESET
EXIT
```

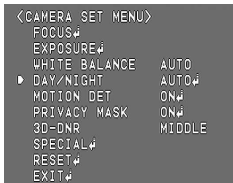
1. Select [WHITE BALANCE] option on the [CAMERA SET] menu.
2. Use [**N**] or [**F**] button to select a mode then press [**M**].
 - ATW (Auto-Tracing White Balance): In this mode, the color temperature range for the proper white balance is approximately 1 800 °K to 10 500 °K. Proper white balance may not be obtained under the following conditions:
 - When the color temperature is out of the 1 800 °K to 10 500 °K range.

Menu Operation

- When the scene contains mostly high color temperature objects, such as a blue sky or sunset.
- When the scene is dim.
- 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 to 5 400°K range.
 - 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.

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.

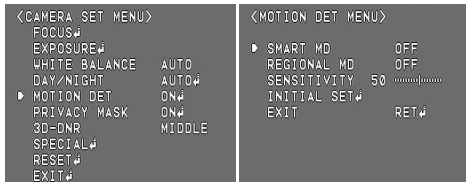
- D/N LEVEL: Use [N] or [F] button to select a level.

- 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**].

- 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.
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

Menu Operation

motion is detected.

Privacy Mask setting

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

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.

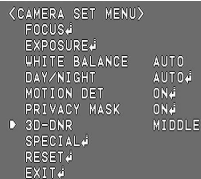
Menu Operation

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 MASK4, MASK5 to MASK8)

3D-DNR setting



```
<CAMERA SET MENU>
FOCUS
EXPOSURE
WHITE BALANCE    AUTO
DAY/NIGHT        AUTO
MOTION DET       ON
PRIVACY MASK     ON
▶ 3D-DNR         MIDDLE
SPECIAL
RESET
EXIT
```

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	253
EXPOSURE		D-EFFECT	OFF
WHITE BALANCE	AUTO	COLOR	ON
DAY/NIGHT	AUTO	FREEZE	OFF
MOTION DET	ON	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.
 - V-FLIP: Flip the picture vertically.
 - MIRROR: Turn on the mirror effect.
 - 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

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:

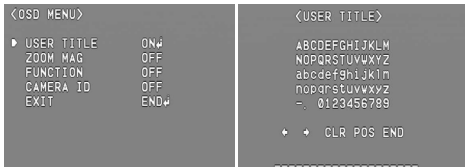
If you set the [STABILIZER] to ON, the Digital zoom is set to [x1.1] automatically.

Menu Operation

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 [SPECIAL] screen.
 - Use **[N]** or **[F]** button to select a [ON] then press **[M]**. The USER TITLE menu appears.



- 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.

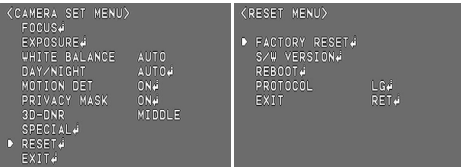
Language setting

Select a language for setup menu and information display.

Menu Operation

Reset settings

- Press **[M]** to confirm your selection.

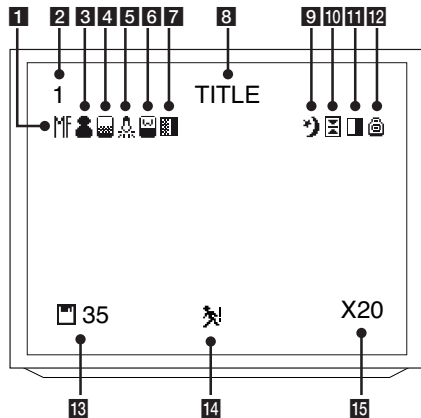


- Select **[RESET]** option.
- Press **[M]** button and the RESET menu appears.
- Use **[T]** or **[W]** to select option.
 - FACTORY RESET:** Clear certain settings and information and return to factory default settings.
 - S/W VERSION:** Displays the software version on the monitor.
 - REBOOT:** Reboot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

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
		AF	One Push Mode
		AF	Displays when the Auto focus is operating.
2	Camera ID	0~255	Displays the camera ID.
3	Manual Focus Action	Person icon	Focus Near
		Building icon	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~Z, 0~9, '-', ',', ''	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

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

Note:

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

Reference

Specifications

ITEM	LCZ2850-DN	LCZ2850-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	x28 Zoom, F 1.5 (Wide End), F 3.7 (Tele End)	
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		LCZ2850-DN	LCZ2850-DP
S/N Ratio		52 dB (AGC Off)	
Minimum Illumination	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	LCZ2850-DN	LCZ2850-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 85 % RH	
Weight	420 g	
Dimension (H x V x D)	57 mm x 69 mm x 109 mm	

