

# clarion

Owner's manual & Installation manual

## CJ-7500E

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7" WATERPROOF WIDESCREEN DIGITAL QUAD COLOR MONITOR



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This unit has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This unit generates, uses, and can radiate radio frequency energy, and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation.

If this unit does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to consult the dealer or an experienced radio/TV technician for help.

**■ INFORMATION FOR USERS:  
CHANGES OR MODIFICATIONS TO THIS  
PRODUCT NOT APPROVED BY THE  
MANUFACTURER WILL VOID THE  
WARRANTY AND WILL VIOLATE FCC  
APPROVAL.**






**■ Declaration of conformity**  
We Clarion declares that the product CJ-7500 is following the provision of Directive 2004/108/EC and Directive 2011/65/EU with the essential requirements and the other relevant regulations.

Clarion Europe SAS  
Z.I. du Pré à Varois-Route de Pompey, 54670  
Custines, France  
telephone: +33(0)3 83 49 44 00  
facsimile: +33(0)3 83 49 45 99

# 1. SAFETY INSTRUCTIONS

Please read the "Safety Rules" carefully before using this product. Following the safety rules prevents users from damages related with the misuse of the product. It is very important to follow these safety rules. We state "Caution" and "Warning" to clarify any potential risk of damage associated with the misuse of the product.

 <b>WARNING</b>	This information is for preventing bodily harm or even death and user should follow these safety rules.
 <b>CAUTION</b>	This information is for preventing damage or shortening the life time of the products.
 <b>ATTENTION</b>	This information is for user's reference for better usability.

## **WARNING**

- **Do not install the monitor in effective range of air bags.**

It may cause malfunction of air bag or injury in the event of an accident deploying the air bag.



- **Do not use if smoke is seen or unit emits burning smell.**

It may cause fire. Discontinue use and contact place of purchase.



- **Do not disassemble, repair or modify.**

It may cause malfunction or injury and may void warranty. Make inquiries to place of purchase for repair and checkup.



- **Do not reverse vehicle while relying only on the monitor image.**



- **Drive slowly when reversing.**





## CAUTION

- **Disconnect battery before installation. Re-connect once installation is complete.**

Prevents electric shock or short circuit.



- **Do not use for long periods without engine running.**

It may cause battery to go flat.



- **The rear-view monitor image has the same right-left inversion as your vehicle's rearview mirrors. Depending on the vehicle, the field and angle of view may differ.**



- **Do not use multi socket or extended adaptor.**

It may cause unexpected overheating, fire and malfunction.



- **Unplug product when not in use for a long time.**

It may cause fire by short circuit due to overheating.



- **Do not place near magnet.**

It may cause malfunction or picture distortion.



## 2. BEFORE USE

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### Precautions (when you use the monitor)

- Use the product at the temperature range of  $-10^{\circ}\text{C} \sim 60^{\circ}\text{C}$ .
- Screen may be a little dark when the product is operated in low temperature areas. Screen will show normal luminosity after a few minutes.
- Do not disassemble and modify the product in any way. This may cause fire and/or electric shock.
- When you install the product in a vehicle and watch the monitor, the car engine should be running to avoid flattening the battery.

### Precautions (when you use the product in a vehicle)

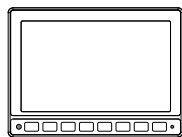
- The driver should not use the product while he/she is driving.
- Be cautious of shock when you use the product in a vehicle.
- Cover the product when exposed to direct rays of the sun for a long period of time. (You should keep the product at a temperature range of  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$ .)

## 3. FEATURES

- 7" WVGA (800x480) LCD panel
- Water resistant (IP67), Aluminum housing
- 8 language display selection (English-French-German-Italian-Spanish-Swedish-Chinese-Japanese)
- DC12~24V
- Max.4 camera input
- Camera input screen inversion (Normal/Mirror mode)
- User can choose split screen (2/3/4 Split screen)
- Dimmer sensor is built-in

## 4. CONTENTS

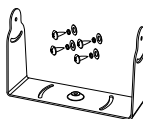
\* When opening the gift box, please check the contents listed below. If you find parts are missing, please contact place of purchase.



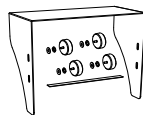
Monitor (1)



Monitor cable (1)



- U-Bracket (1)
- Screw (4)



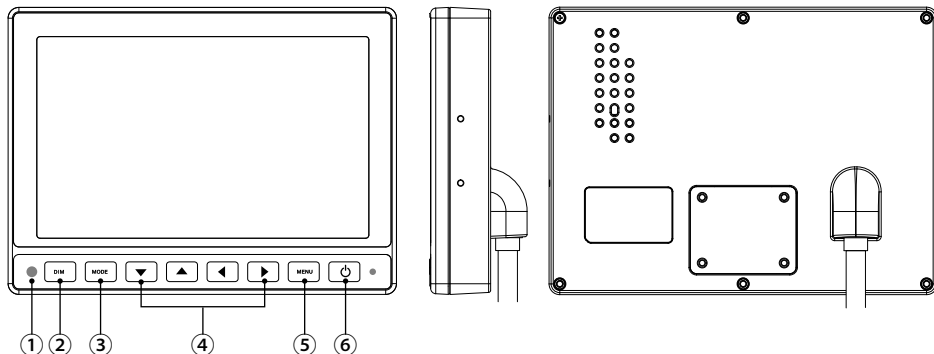
- Sun Visor (1)
- Screw (4)
- Adhesive tape (1)



Manual (1)

# 5. BUTTON FUNCTIONS

[Monitor]



1. DIMMER SENSOR

Automatic brightness control sensor

2. DIM

DIMMER

3. MODE

Switch Screen / Select SUB-MENU

4. ▼ ▲ ◀ ▶

DOWN/UP/LEFT/RIGHT

5. MENU

Switch Main Menu

6. POWER

Power ON/Stand-by

# 6. FUNCTIONS

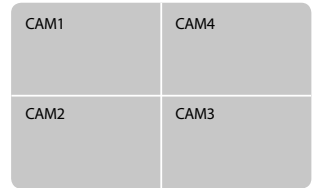
## 1 POWER ON/OFF

Press [⏻] button then the picture from the cameras will be shown on the monitor.

Press [⏻] button again to switch off.

\* If there is no camera video input, the screen will remain Black.

\* Factory default setting shows 4 way split screen.

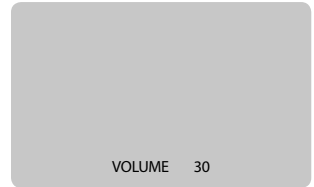


## 2 VOLUME CONTROL

Press [◀ ▶] button to control volume(0~100).

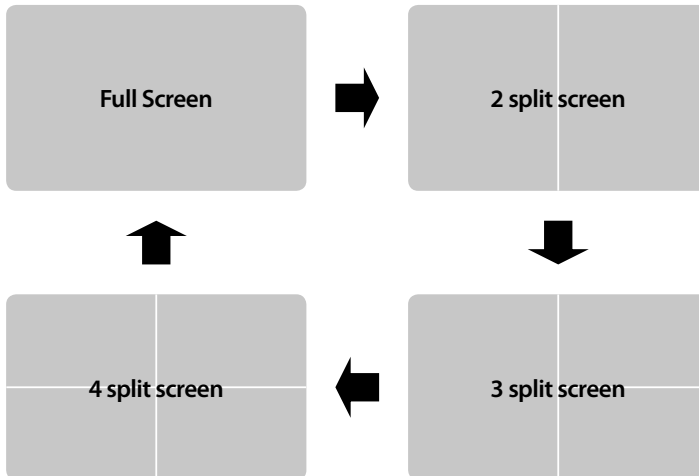
Volume control works only in CAM1 screen.

\* Factory default Volume setting is 30.



## 3 SCREEN SWITCH

Press [MODE] button on monitor, then the screen switches in the following order.

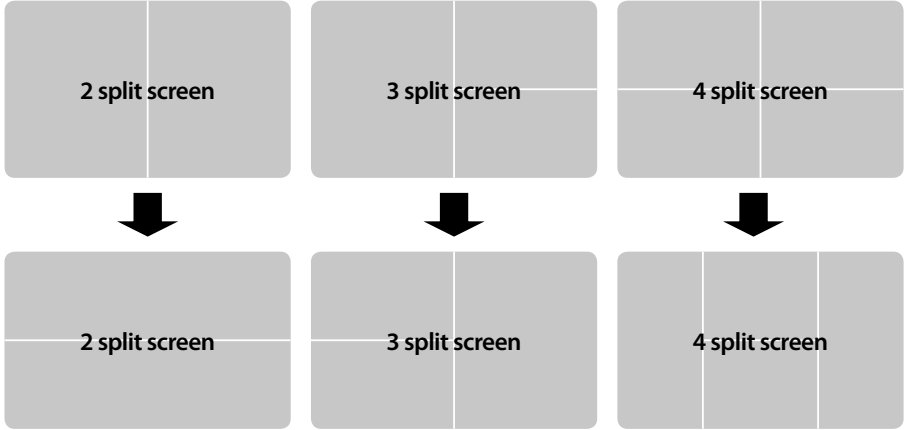




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#### 4 SELECT SPLIT MODE

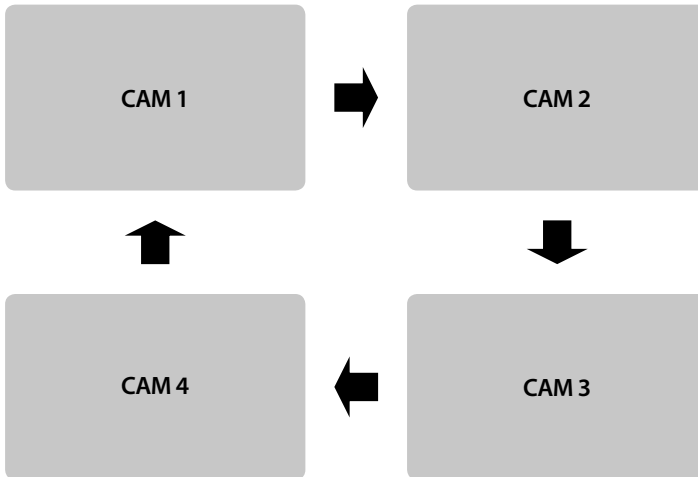
Each split screen has two options. In split mode, press [▼▲] button then the screen switches between both options.



#### 5 CAMERA SELECTION

##### 1) FULL SCREEN MODE

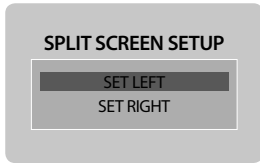
In full screen mode, press [▼▲] button then the screen switches in the following order.



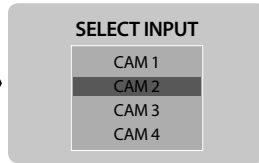
Press [MENU] button, then it displays screen information (Input mode / Volume).

## 2) 2 SPLIT SCREEN MODE

Press [MENU] button to go to 「SPLIT SCREEN SETUP」.



Please select the camera position (left or right) by using [▼▲] button.



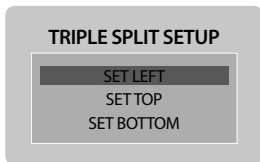
Then press [▶] button to go to 「SELECT INPUT」. Please select the camera by using [▼▲] button.



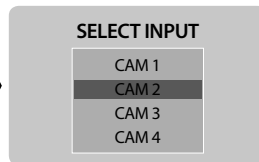
Then press [▶] button to save your selection.

## 3) TRIPLE SPLIT SCREEN MODE

Press [MENU] button to go to 「TRIPLE SCREEN SETUP」.



Please select the camera position (left or right) by using [▼▲] button.



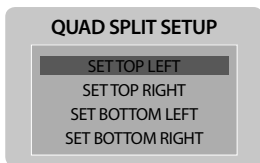
Then press [▶] button to go to 「SELECT INPUT」. Please select the camera by using [▼▲] button.



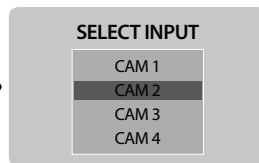
Then press [▶] button to save your selection.

## 4) QUAD SCREEN MODE

Press [MENU] button to go to 「QUAD SCREEN SETUP」.



Please select the camera position (Upper left, Upper right, Lower left, Lower right) by using [▼▲] button.



Then press [▶] button to go to 「SELECT INPUT」. Please select the camera by using [▼▲] button.

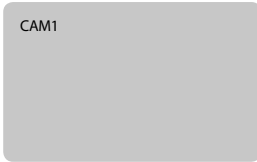


Then press [▶] button to save your selection.

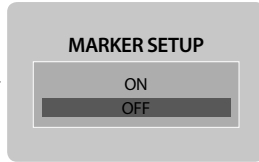
Repeat these steps to set each camera's position.

## 6) CAMERA MIRROR/NORMAL MODE SETTING

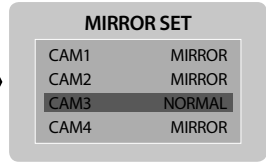
### 1) CAM1 full screen



Press [MENU] button.

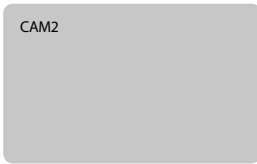


Press [MENU] button.

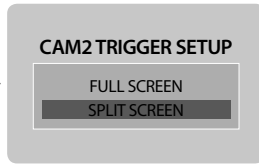


Select camera with [▼▲] button and then press [▶] button to select Normal / Mirror view.

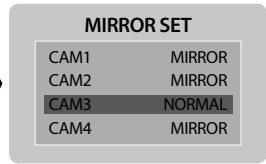
### 2) CAM2 or CAM3 full screen



Press [MENU] button.



Press [MENU] button.

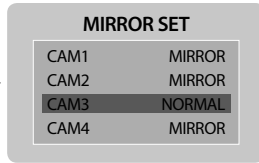


Select camera with [▼▲] button and then press [▶] button to select Normal / Mirror view.

### 3) CAM4 full screen

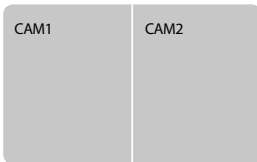


Press [MENU] button.

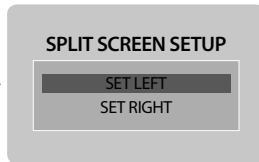


Select camera with [▼▲] button and then press [▶] button to select Normal / Mirror view.

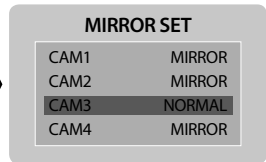
### 4) Split screen (2/3/4)



Press [MENU] button.



Press [MENU] button.



Select camera with [▼▲] button and then press [▶] button to select Normal / Mirror view.

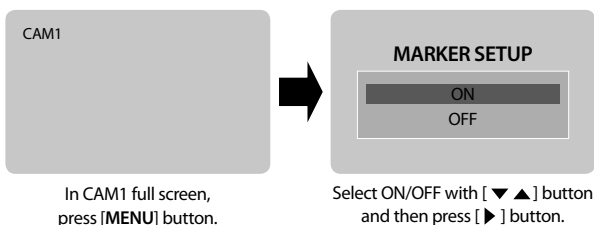
## 7 ON SCREEN DISTANCE MARKER SETTING

### Warning

- The onscreen distance markers should be considered as a general reference to assist the driver in assessing the distances depicted on the screen. The distance markers have been designed based on the “CCD camera installation conditions” listed in the next section, but differences in vehicle design and construction may result in the actual installation condition or location being different from the conditions listed. In such cases, the display location should be set at the closest marker No.
- Distance markers cannot be set if non Clarion cameras are used.

### Caution

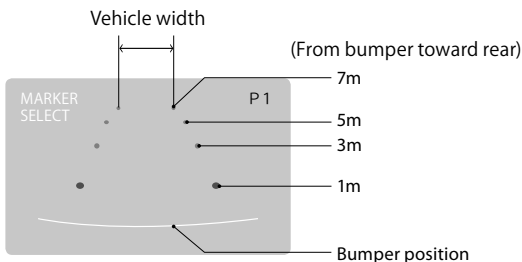
- The markers may not indicate the exact position of the bumper, the vehicle's width or the distance to the rear. Use as a reference only.



### 1) MARKER SELECTION

- Press [MENU] button four times, and select MARKER SETUP menu.
- Press [◀ ▶] button, and switch marker pattern.

**\* Distance marker function setting is only possible when MARKER SETUP ON is selected on CAM1, full screen mode.**



### ■ CCD camera installation conditions (distance marker input conditions)

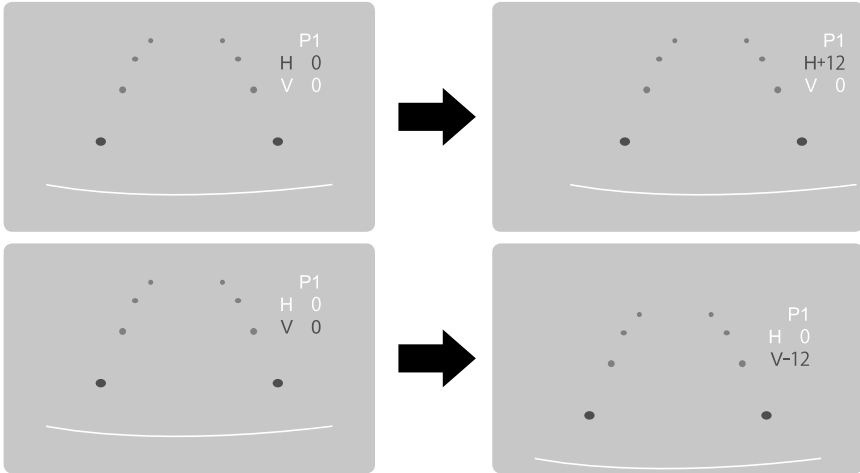
(Unit : mm)

Marker No. (Pattern)	Camera Install Height	Vehicle Width
P1	2,000	2,300
P2	2,250	
P3	2,500	
P4	2,750	
P5	3,000	
P6	3,250	
P7	3,500	2,500

## 2) MARKER ADJUSTMENT (Adjusting the bumper position)

- Press [MENU] button five times, and select MARKER ADJUST menu.
- Press [▼▲] button, and select H/V. (H: horizontal / V: vertical)
- Press [◀▶] button, and switch marker pattern.  
(H = -12 ~ +12, V = -12 ~ +12, Default setting: H = 0, V = 0)
- After 10 seconds, set up screen disappears, and set up finishes.

\* If there is no button operation, set up screen disappears even during set up process.

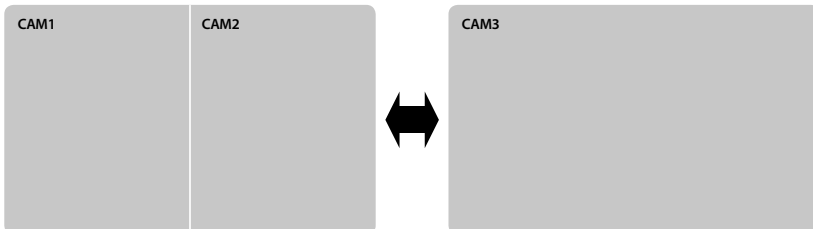


## 8 Automatic Screen switching using Trigger inputs

<Trigger input> or <Trigger signal> is when camera priority is selected by a signal, for example if driver uses right/left turn signal or reverse gear, the monitor shows connected camera in driving mode.

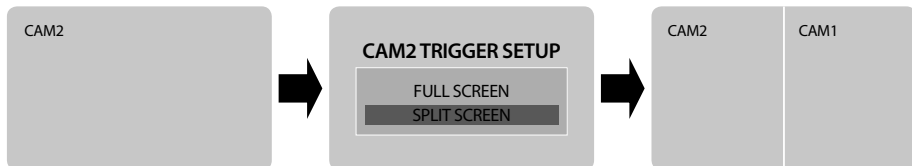
\* Below example is set with TRG1(Reverse gear)=CAM1 / TRG2(Left turn signal)=CAM2 / TRG3(Right turn signal)=CAM3.

- 1) If there is a trigger signal input, the connected camera is displayed as full screen and switches back when the signal switches off.

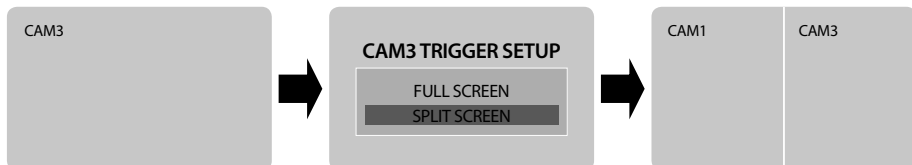


2) In case of TRG2 (Left turn signal) or TRG3 (Right turn signal), you can choose full screen or split screen by OSD setting.

\* This function is for showing not only Left(Right) but also rear view together at the same time, regardless of former screen status. It displays CAM2(3) and CAM1 as split screen when TRG2(3) signal input is on.

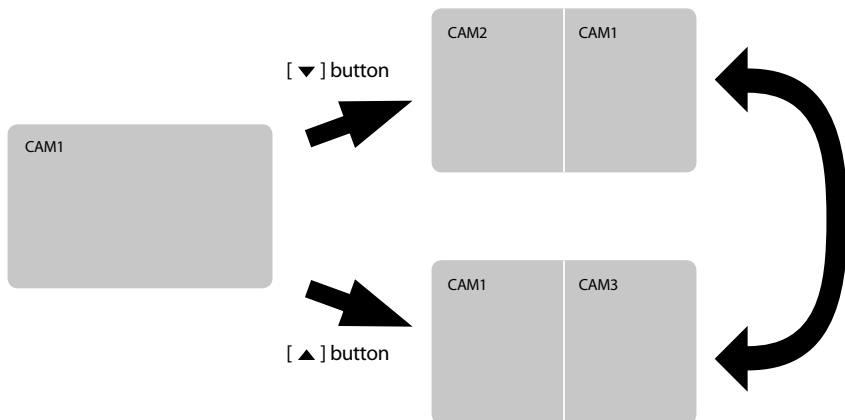


In CAM2 full screen, press [MENU] button to see OSD. Select split screen with [▼▲] button and then press [▶] button. If there is left signal input(TRG2), then CAM2(Left) in left side and CAM1(Rear) in right side will be shown on the screen.

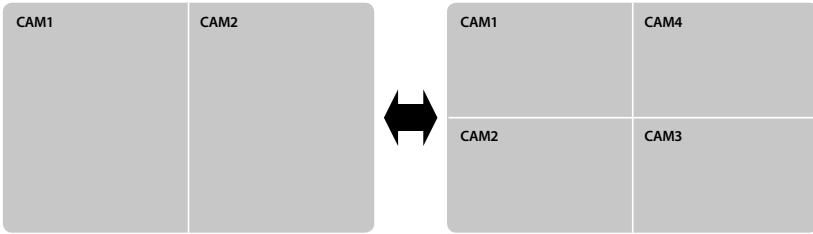


In CAM3 full screen, press [MENU] button to see OSD. Select split screen with [▼▲] button and then press [▶] button. If there is right signal input(TRG3), then CAM1(Rear) in left side and CAM3(Right) in right side will be shown on the screen.

3) When there is the TRG1(Reverse gear) input, CAM1 video will be shown on the screen. Using [▼▲] button, the 2 split screen of CAM2/CAM1 or CAM1/CAM3 can be displayed.



4) In case of a hazard flasher trigger(TRG2+TRG3), the monitor displays CAM1~CAM4 as quad split screen. The screen switches back when the hazard flasher trigger is switched off.

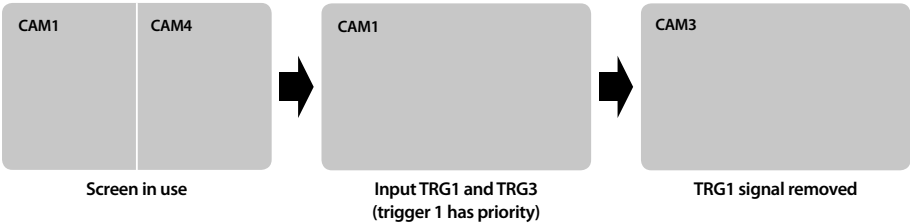


The example is set with TRG1(Reverse gear)=CAM1 / TRG2(Left turn signal)=CAM2 / TRG3(Right turn signal)=CAM3

5) When more than two trigger signals are received at once, the monitor will display the highest priority trigger. As triggers are removed, screen will show next highest priority trigger (see priority order below).



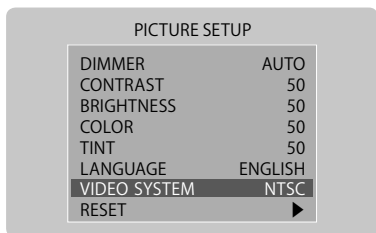
**TRIGGER PRIORITY ORDER**  
 TRG1(Reverse gear) > TRG2+3(Hazard flasher) > TRG2(Left turn signal) > TRG3(Right turn signal)



- \* During the time that trigger is activated, [ MODE ] [ MENU ] [ POWER ] buttons don't work.
- \* In standby status if the trigger wire is activated the monitor will turn on. The screen will turn off once the power is de-activated to the trigger wire. And the screens turns off when the trigger signal switches off.

# 7. SETTINGS

## 1 VIDEO STANDARD SYSTEM NTSC/PAL SELECTION



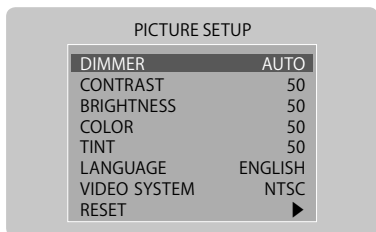
- 1) Press [MENU] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [▼▲] button to move a to VIDEO SYSTEM and choose video system by pressing [◀▶] button.



NOTICE

Please select NTSC for video system as Clarion cameras are compatible with NTSC video system.

## 2 DIMMER SENSOR SETTING

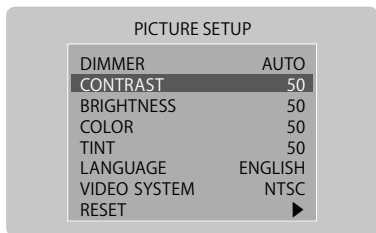


- 1) Press [MENU] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [▼▲] button to move to DIMMER and choose proper value, DAY(brighter)/ NIGHT(Darker)/ AUTO(Sensor) by pressing [◀▶] button.

Press [DIM] button to switch DAY → NIGHT → AUTO → DAY.

\* Factory default setting is AUTO.

## 3 PICTURE SETUP

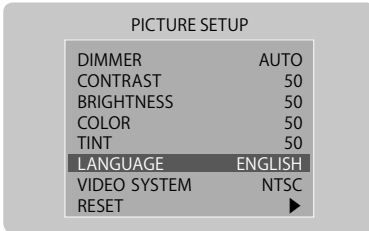


- 1) Press [MENU] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [▼▲] button to move to each menu and choose proper value by pressing [◀▶] button.

\* Factory default setting value is 50.



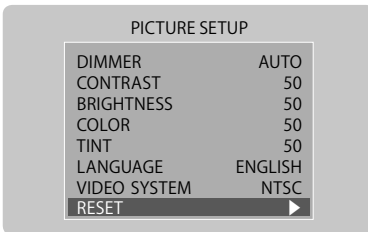
#### 4 LANGUAGE SETTING



- 1) Press [MENU] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [▼▲] button to move to language and choose proper value by pressing [◀ ▶] button.

\* Factory default setting is English (8 languages available).

#### 5 INITIALIZATION

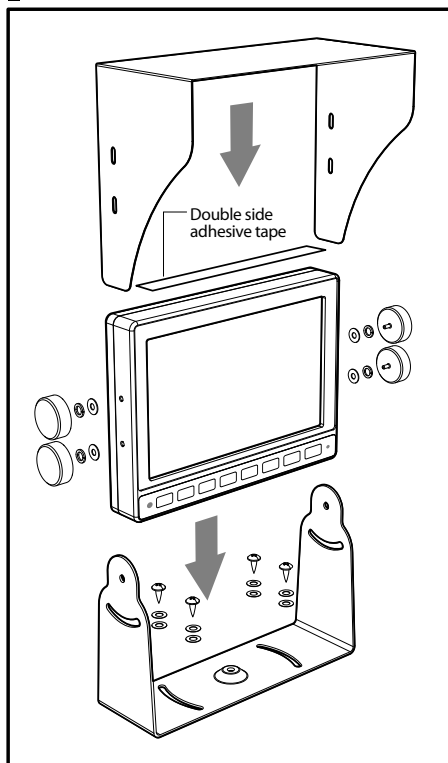


- 1) Press [MENU] button until OSD menu [PICTURE SETUP] appears.
- 2) Press [▼▲] button to move to RESET and then press [◀ ▶] button.

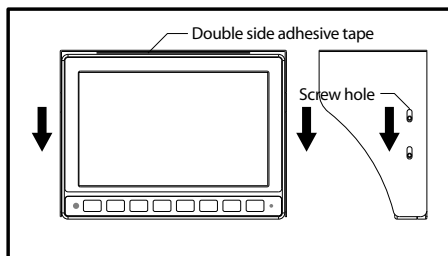
\* Returns the Monitor to factory default settings except for video input (NTSC or PAL).

## 8. INSTALLATION

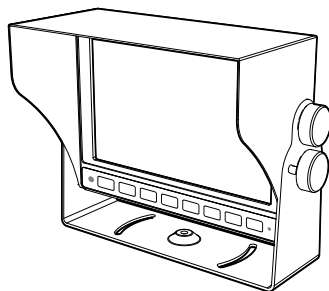
### INSTALLATION (U-Bracket)



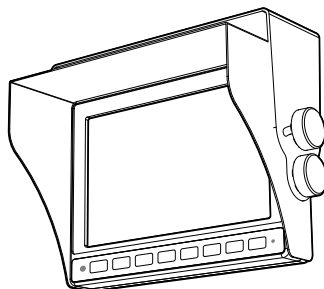
1. Please ensure that the monitor is installed with enough room for heat to dissipate. Install the monitor stand with enclosed screws and double side adhesive tape as per the picture.
2. Fix the monitor to the monitor stand firmly.



3. Sun Visor should be installed with 4 screws.

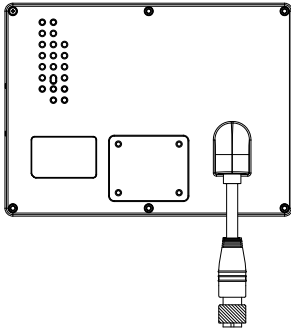


Standard Installation



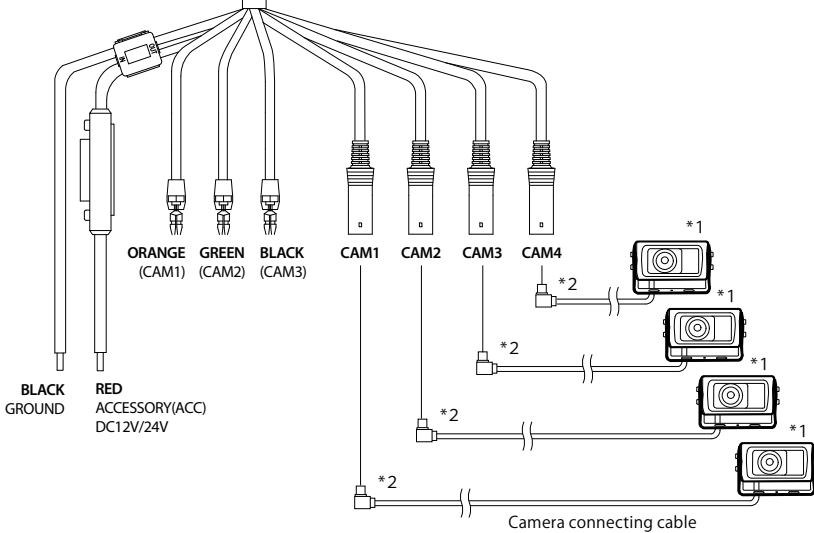
Ceiling Installation

# 9. CONNECTIONS



MONITOR CABLE

\* Make sure that the connector cable with the correct pin configuration is used.



\*1 Use Clarion Cameras only.

\*2 A camera connecting cable, sold separately, is required for connecting the camera.

■ Please ensure that the correct trigger wires are connected to the corresponding cameras.

ORANGE (CAM1, priority) Standby + (for rear-view)

\* Connect this cable to the "+" side of the Reverse gear globe.

GREEN, BLACK (CAM2, CAM3) Standby + (for side-view)

\* Connect Green cable to the "+" side of the Left turn signal globe

- Connect Black cable to the "+" side of the Right turn signal globe.

## 10. TROUBLESHOOTING

Problem	Cause	Measure
No image is displayed.	Is camera connected properly?	Check the wiring to the camera and the camera connection.
Power does not turn on.	Is power cable connected properly?	Check the wiring.
	Is a fuse blown out?	Replace with a fuse of the same amperage (5A)
Color is washed-out.	Operating environment is inappropriate.	Temperature in the vehicle is below -10°C or over 60°C. Check to see that the temperature in the vehicle is appropriate (around 25°C).

## 11. SPECIFICATIONS

LCD panel	Screen size	7 inch
	Resolution	800(W) x 3(RGB) x 480(H)
	Brightness	400cd/m <sup>2</sup>
	Contrast ratio	500 : 1
Power supply	Voltage	DC12V~24V (10.8V ~31.2V)
	Current	Approx. 900mA (DC12V, in case of connecting four sets of camera(CC-2000).)
Speaker		0.5 Watt max.
Language display selection		8 Language
Operating temperature		-10°C ~ +60°C / -14°F ~ +140°F
Storage temperature		-20°C ~ +70°C / -4°F ~ +158°F
Dimension (W x D x H)		190 x 141 x 29mm/7.48 x 5.55 x 1.14 inch
Weight		879g / 31oz (monitor only)

\* The design and specification are subject to change without notice.



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# **Clarion Co., Ltd.**

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Printed in Korea