

# Installation Instructions

## 7 Inch Wireless Colour Camera System

The Gemineye™ wireless camera system features 2.4GHZ digital signal transmission and offers quality and functionality equal to wired systems. Featuring a 7" LCD colour monitor and a CMOS infrared camera, this system delivers excellent picture quality. The system is expandable to operate up to 4 separate cameras (EC2028-WC only), each with independent trigger wires and all using a wireless signal to transmit image data to the monitor. This system dramatically reduces installation complexity and expense while eliminating the potential for wires being damaged during operation of the vehicle. Quad view split screen enabled.



**IMPORTANT!** Read all instructions before installing and using. Installer: This manual must be delivered to the end user.



### **WARNING!**

Failure to install or use this product according to manufacturers recommendations may result in property damage, serious bodily/personal injury, and/or death to you and those you are seeking to protect!



**Do not install and/or operate this safety product unless you have read and understand the safety information contained in this manual.**

1. Proper installation combined with operator training in the use, care, and maintenance of safety products are essential to ensure the safety of you and those you are trying to protect.
2. Exercise caution when working with live electrical connections.
3. This product must be properly grounded. Inadequate grounding and/or shorting of electrical connections can cause high current arcing, which can cause personal injury and/or severe vehicle damage, including fire.
4. Proper placement and installation are vital to the performance of this safety product. Install this product so that the performance of the system is maximized and the controls are placed within convenient reach of the operator so that s/he can operate the system without losing eye contact with the roadway.
5. It is the responsibility of the vehicle operator to ensure during use that all features of this product work correctly. In use, the vehicle operator should ensure the field-of-view of the camera/monitor is not blocked by vehicle components (i.e., open trunks or compartment doors), people, vehicles, or other obstructions.
6. Never take the right-of-way for granted. It is your responsibility to be sure you can proceed safely before entering an intersection, driving against traffic, responding at a high rate of speed, walking on or around traffic lanes.
7. This equipment is intended for use by authorized personnel only. The user is responsible for understanding and obeying all laws regarding safety products. Therefore, the user should check all applicable city, state, and federal laws and regulations. The manufacturer assumes no liability for any loss resulting from the use of this safety product.

CAMERA	EC2028-WC
Image	1/3 CCD
Voltage Requirement	12-32V
Effective Pixels	628(H) x 582(V)
Power Consumption	5W
Lens Size	1/4"
Lens Angle	120°Horizontal/90 Vertical
Audio	No
Light Sensor	Auto Switch B&W
Infrared LEDs	18
Housing	Aluminum Alloy
Mech. Vibration	8g
Mounting	Rear/Front
Weight	1.20 lbs / 0.54kg
Dimensions (WxHxD)	(L) 90x (W) 60.5x (T) 56.5 mm
Operating Temp.	-4°F to 158°F / -20 to +70 oC
IP Rating	IP66
Approvals	FCC,CE,RoHS
Current Consumption	500mA Max
Video Delay	150ms
Frame Rate	25fps
System	PAL

MONITOR	EC7000B-WM
Screen Size	7" (4:3) and (16:9)
Controller	4 Camera
Voltage	12-32 VDC
Power	Approximate: 7W
Mirror Imaging	Yes (via Camera and Monitor Switch)
Resolution	800 (W) x RGB x 480 (H)
System	PAL/NTSC
Viewing Angle	L/R/U/D: 60°/60°/45°/60°
Visible Area	154X86mm
Contrast	400:1
Split Screen Feature	Quad View Split Screen
AV Compatible	No
DVR Compatible	No
Audio	No
Brightness	400cd/m2
Light Sensor	Auto Dim
Camera Selection	1-4 Via Trigger Wires
Connection: CAM	DC plug/2 wire
Connection (Monitor Pigtail)	Male 6pin/5 wire
Housing	Plastic
Mounting	Pedestal
Mech. Vibration	Pedestal Bracket - 3G
Weight	1.50 lbs / 0.67kg
Dimensions (WxHxD)	176(W) x 123(H) x 27(D)mm
Operating Temp	-4°F to 158°F / -20 to +70 oC
Remote Control	Yes
Approvals	FCC,CE,RoHS
Trigger voltage	12 - 32V
Distance	30 - 100 meters



### Caution!

When drilling into any vehicle surface, make sure that the area is free from any electrical wires, fuel lines, vehicle upholstery, etc. that could be damaged.

### Notes:

1. Larger wires and tight connections will provide longer service life for components. For high current wires it is recommended that terminal blocks or soldered connections be used with shrink tubing to protect the connections. Do not use insulation displacement connectors (e.g., 3M Scotchlock type connectors)
2. Route wiring using grommets and sealant when passing through compartment walls. Minimize the number of splices to reduce voltage drop. High ambient temperatures (e.g., under-hood) will significantly reduce the current carrying capacity of wires, fuses, and circuit breakers. All wiring should conform to the minimum wire size and other recommendations of the manufacturer and be protected from moving parts and hot surfaces. Looms, grommets, cable ties, and similar installation hardware should be used to anchor and protect all wiring.
3. Fuses or circuit breakers should be located as close to the power takeoff points as possible and properly sized to protect the wiring and devices.
4. Particular attention should be paid to the location and method of making electrical connections and splices to protect these points from corrosion and loss of conductivity.
5. Ground termination should be only be made to substantial chassis components, preferably directly to the vehicle battery.
6. Circuit breakers are very sensitive to high temperatures and will "false trip" when mounted in hot environments or operated close to their capacity.

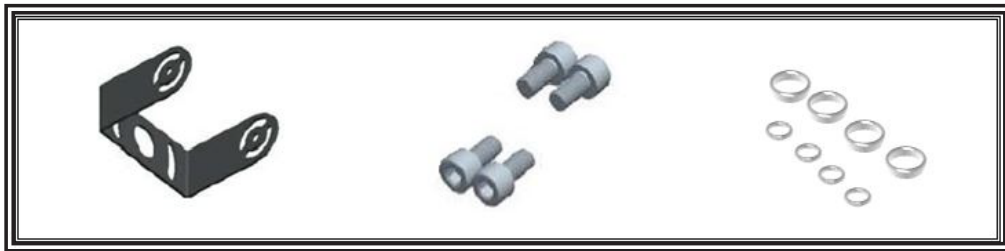
## Installation, Wiring and Function

### Installation:

#### Camera Model EC2028-WC

**Important!** Mount the camera at a location that provides the best view of the area immediately behind the vehicle. Generally, mounting locations toward the top of the vehicle provide the best field of view. Lower mounting locations reduce the field of view and increase the likelihood of damage from road spray.

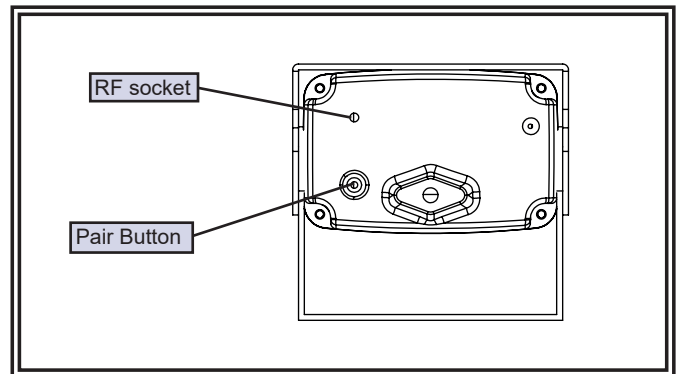
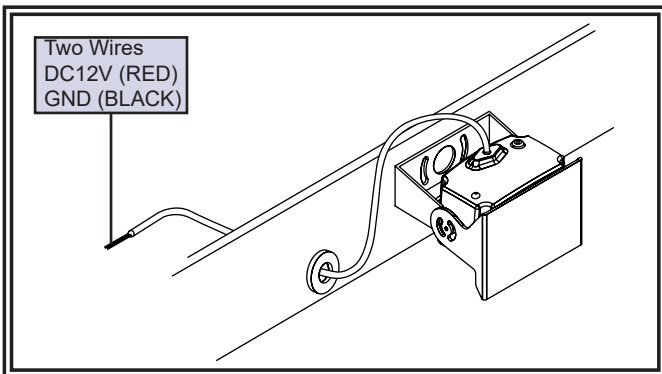
1. Find an appropriate location for installation.
2. Drill holes according to the size of U-bracket and fix the U-bracket.
3. Drill a 3/4" (19mm) hole next to U-bracket.
4. Install the camera on U-bracket.
5. Connect the camera tail with the extension cable from inside the vehicle.
6. Loosen the hex head screws and adjust the camera's position to get the best view angle in the monitor.



### Wiring:

Picture depicted is for reference only.

**Important!** Waterproof all connections whether inside or outside the vehicle by using sealant and wrapping with insulation tape. Wrap tape tightly, overlapping by one-half widths so there are no gaps.



### Pairing:

When monitor is in the PAIR function and 50 sec countdown is in progress, press and hold for 5 seconds PAIR button on the back of camera for successful pairing process.

**Monitor:**

**Model EC7000B-WM**



**WARNING!**

To prevent accidental shock, **DO NOT OPEN THE MONITOR CASE**. Opening the monitor case will expose the inside of the monitor to conditions that could adversely affect performance. Any evidence of tampering with sealed components will void the warranty.

**Important!** Do not expose the monitor to water, it is not waterproof. Any water that leaks into the monitor could cause extensive damage.

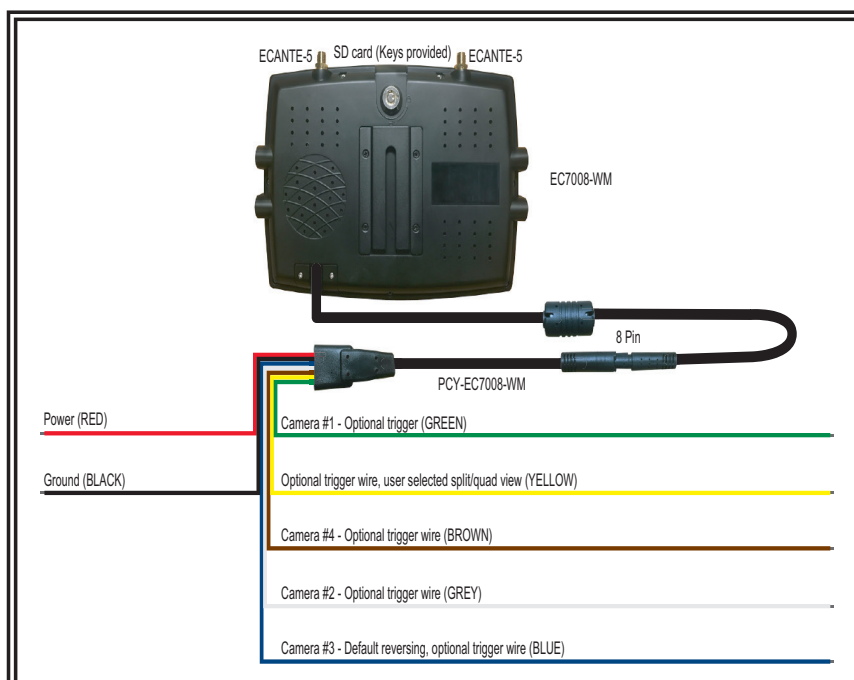
Installation instruction of using pedestal base:

1. Select suitable position on vehicle and fix the base support.
2. Fix the monitor to the base support and adjust the view angle.
3. Put on the sun-visor and connect the monitor with the Pigtail cable.

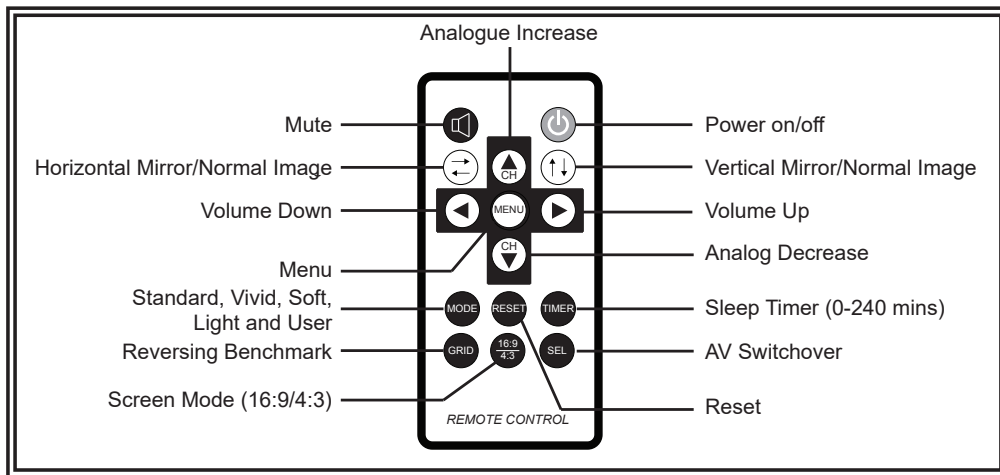
**Monitor Parts Identification**



- ① Light sensor
- ② Power On/Off
- ③ AV Switchover
- ④ Analogue decrease/ Volume decrease
- ⑤ Menu
- ⑥ Analogue Increase/ Volume increase
- ⑦ Blank keystroke
- ⑧ Blank keystroke
- ⑨ Blank keystroke
- ⑩ Remote receiver
- ⑪ Earphone Jack (N/A)



**Remote:**



**Menu Operations:**

Press the Menu button on the remote control or the Menu button on the monitor to get to the Menu selection.

Use the Volume Up & Volume Down on the remote control or Analog Increase & Analog Decrease on the monitor to toggle between menus.

Use CH up & CH down button on the remote or Menu button on the monitor to highlight function you want to change.

Use the Volume Up on the remote control or Analog Increase on the monitor to change value.

Wait 15 seconds for Menu to close itself.

<b>SYSTEM</b>	
Language	English/Deutsch/Francais/Espanol/Portugal/Italiano
Source	Change input source
Guide lines	Display reversing guide lines

<b>OPTION</b>	
Camera 1	Set trigger delay 0-15s
Camera 2	Set trigger delay 0-15s
Camera 3	Set trigger delay 0-15s
Camera 4	Set trigger delay 0-15s
Rotate	Change camera view - Mirror/Normal
Pair	Pair with Camera ON/OFF

<b>PICTURE</b>	
Bright	Adjust brightness setting. 0 - 100
Contrast	Adjust contrast setting. 0 - 100
Color	Adjust color setting. 0 - 100
Reset	Reset the device.

<b>PRESET</b>	
AV1	ON/OFF
AV2	ON/OFF
AV3	ON/OFF
AV4	ON/OFF
VGA	ON/OFF - N/A

<b>VOLUME</b>	
Volume	0 - 100 - N/A



**Manufacturer Limited Warranty and Limitation of Liability:**

Manufacturer warrants that on the date of purchase this product will conform to Manufacturer's specifications for this product (which are available from the Manufacturer upon request). This Limited Warranty extends for Twelve (12) months from the date of purchase.

DAMAGE TO PARTS OR PRODUCTS RESULTING FROM TAMPERING, ACCIDENT, ABUSE, MISUSE, NEGLIGENCE, UNAPPROVED MODIFICATIONS, FIRE OR OTHER HAZARD; IMPROPER INSTALLATION OR OPERATION; OR NOT BEING MAINTAINED IN ACCORDANCE WITH THE MAINTENANCE PROCEDURES SET FORTH IN MANUFACTURER'S INSTALLATION AND OPERATING INSTRUCTIONS VOIDS THIS LIMITED WARRANTY.

**Exclusion of Other Warranties:**

MANUFACTURER MAKES NO OTHER WARRANTIES, EXPRESS OR IMPLIED. THE IMPLIED WARRANTIES FOR MERCHANTABILITY, QUALITY OR FITNESS FOR A PARTICULAR PURPOSE, OR ARISING FROM A COURSE OF DEALING, USAGE OR TRADE PRACTICE ARE HEREBY EXCLUDED AND SHALL NOT APPLY TO THE PRODUCT AND ARE HEREBY DISCLAIMED, EXCEPT TO THE EXTENT PROHIBITED BY APPLICABLE LAW. ORAL STATEMENTS OR REPRESENTATIONS ABOUT THE PRODUCT DO NOT CONSTITUTE WARRANTIES.

**Remedies and Limitation of Liability:**

MANUFACTURER'S SOLE LIABILITY AND BUYER'S EXCLUSIVE REMEDY IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR UNDER ANY OTHER THEORY AGAINST MANUFACTURER REGARDING THE PRODUCT AND ITS USE SHALL BE, AT MANUFACTURER'S DISCRETION, THE REPLACEMENT OR REPAIR OF THE PRODUCT, OR THE REFUND OF THE PURCHASE PRICE PAID BY BUYER FOR NON-CONFORMING PRODUCT. IN NO EVENT SHALL MANUFACTURER'S LIABILITY ARISING OUT OF THIS LIMITED WARRANTY OR ANY OTHER CLAIM RELATED TO THE MANUFACTURER'S PRODUCTS EXCEED THE AMOUNT PAID FOR THE PRODUCT BY BUYER AT THE TIME OF THE ORIGINAL PURCHASE. IN NO EVENT SHALL MANUFACTURER BE LIABLE FOR LOST PROFITS, THE COST OF SUBSTITUTE EQUIPMENT OR LABOR, PROPERTY DAMAGE, OR OTHER SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES BASED UPON ANY CLAIM FOR BREACH OF CONTRACT, IMPROPER INSTALLATION, NEGLIGENCE, OR OTHER CLAIM, EVEN IF MANUFACTURER OR A MANUFACTURER'S REPRESENTATIVE HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. MANUFACTURER SHALL HAVE NO FURTHER OBLIGATION OR LIABILITY WITH RESPECT TO THE PRODUCT OR ITS SALE, OPERATION AND USE, AND MANUFACTURER NEITHER ASSUMES NOR AUTHORIZES THE ASSUMPTION OF ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION WITH SUCH PRODUCT.

This Limited Warranty defines specific legal rights. You may have other legal rights which vary from jurisdiction to jurisdiction. Some jurisdictions do not allow the exclusion or limitation of incidental or consequential damages.