

The logo for the EQ Series, featuring a black arrow pointing to the right with the text "EQ Series" in white, italicized font inside the arrow's shaft.

# ***EQ Series***

**1/3" 520TVL High-Res. Color Camera(350HQ/550)**

**1/3" 380TVL High-Res. Color Camera(250)**

**User's Manual**  
**and**  
**Operation Instructions**

# Notice

This manual is presented to users of the EQ series by EverFocus Electronics Corporation. With years of engineering research, EverFocus has spared no effort in manufacturing high quality products to users worldwide, and maintains a policy for continual product improvement. Therefore, EverFocus reserves the right to revise and improve products, their specifications and documentation without notice. All product materials: including accessories and components are provided for your convenience. To keep your EQ Series working at its optimal level, strictly follow the instructions within this manual. EverFocus is not responsible for any damages resulting from inappropriate operation.

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# Safety Warning

## 1. Handle camera with care.

Be careful when handling the camera, do not drop it or subject it to strong shock or vibration to prevent any damages to it. Do not disassemble it or place it on an unstable base.

## 2. Do not install camera near electric or magnetic fields.

Install the camera away from any television, radio transmitter, magnet, electric motor, transformer, or audio speakers since the magnetic fields generated from the above named devices will distort the video image.

## 3. Do not install camera in a high temperature environment.

Install the camera away from space heaters, stoves, or other heat generating devices because the high temperatures generated around these devices can cause deformation, discoloration or other damages to the camera. Install the camera in an area where the temperature range remains between 0° to 50 ° C (32° to 122° F).

## 4. Never aim camera toward the sun whether the unit is in use or not.

The severe rays of direct sunlight or objects that emit extremely intense rays may cause fatal damage to the sensor and internal circuit.

## 5. Cleaning

Do not touch the surface of the CCD sensor directly. Use a soft cloth to remove any dirt from the camera body. Use a lens tissue or cotton tipped applicator and ethanol to clean the CCD sensor and/or the camera lens. Always replace the cover cap on the lens mount, when the camera is not in use.

# Introduction

The new 350 HQ series is a solid-state color video camera specifically designed for high quality surveillance applications. It incorporates break through DSP technology that provides the most reliable and accurate color picture in the security industry. The camera is convenient to use with C-mount or CS-mount lenses and an easy back-focus adjustment helps efficient installation.

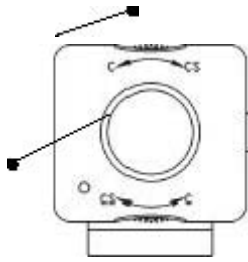
## Main Features:

- 1/3" color CCD pickup device for more than 380/520 TV lines of horizontal resolution.
- Sophisticated DSP (Digital Signal Processing) circuitry design that delivers excellent picture quality and performance.
- Wide range automatic electronic shutter: up to 1/100,000.
- Auto line lock with external phase adjustment.
- Use with either C-mount or CS-mount lenses and easy back-focus adjustment
- System available in NTSC or PAL.

# Specifications

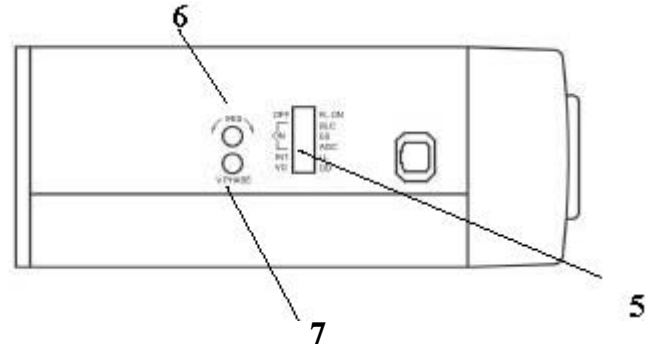
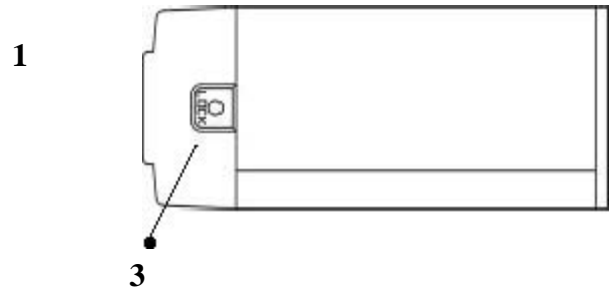
Model	250	350HQ	550EX
<b>Pickup Device:</b>	1/3" interline transfer color CCD		
<b>Video Format:</b>	NTSC / PAL		
<b>Picture Element:</b>	NTSC: 510(H) x 492(V) PAL: 500(H) x 580(V)	NTSC: 768(H) x 494(V) PAL: 752(H) x 582(V)	
<b>Horizontal Resolution:</b>	380TV lines	520TV lines	
<b>Sensitivity:</b>	0.5lux/F=1.2	0.5lux/F=1.2	1.0lux color, 0.15lux monochrome/F=1.2
<b>Video Output:</b>	BNC VBS 1.0Vp-p, 75ohm		
<b>S/N Ration:</b>	Over 48dB		
<b>Electronic Shutter:</b>	Up to 1/100,000		
<b>Back Light comp.:</b>	ON/OFF switch		
<b>Auto Gain Control:</b>	ON/OFF switch		
<b>Auto White Balance:</b>	Digital auto tracing		
<b>Fluorescent:</b>	ON/OFF switch		
<b>Auto IRIS:</b>	Switch-able Video Drive or Direct Drive		
<b>Sync. Mode:</b>	<ol style="list-style-type: none"> <li>1. Line-Locked with LL on</li> <li>2. Internal Sync. With LL off</li> </ol>		
<b>Gamma Correction:</b>	>0.45		
<b>Power Source:</b>	12VDC/24VAC; 90~265VAC		
<b>Dimension</b>	51(W) x 57(H) x 140.2(D)mm;2(W)x 2.25(H)x5.52(D)inch		
<b>Operating Temperature:</b>	0°~50°,20%~80%		
<b>Power Consumption:</b>	5W max.		

# Major Parts Names and Their Functions

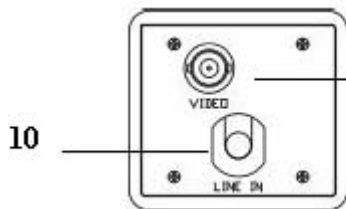
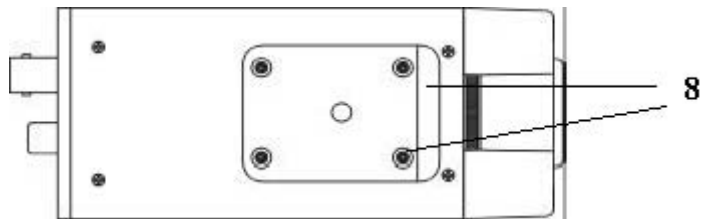


**Front**

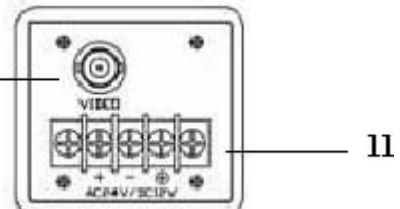
**Side**



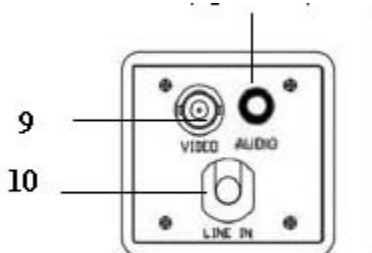
**Top**



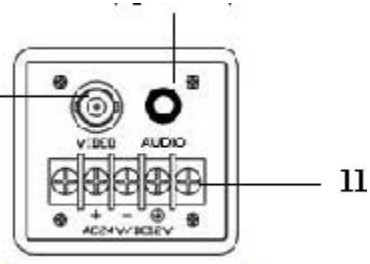
9



12(optional)



9



**Rear (EQ series) Rear (EQ series "A")**

## **1. Focal Length Adjustment Ring**

Use this ring to adjust the appropriate focal length according to the lens type. Rotate the ring clockwise for a CS-mount lens; rotate the ring counterclockwise for a C-mount lens. The factory setting is C-mount.

## **2. Lens Mount**

Used to mount an appropriate C-mount or CS-mount lens.

## **3. Locking Screw**

Use the locking screw to set the focal length.

## **4. Lens Connector (4 pin socket)**

Connect to the lens plug of the auto iris lens.

## **5. Control Switches**

There are six (6) control switches located on the sideboard. These are used to set the special features. The switches in order are for Flicker less, Back Light Compensation, Electronic Shutter, Automatic Gain Control, Line-Lock and Auto Iris Lens type.

### **Fluorescent On/OFF**

This is a function compensates for the flickering images that can occur in fluorescent light conditions. When filming images in fluorescent lighting, turn on the Fluorescent function; the default setting is off.

### **BLC (Back Light Compensation) On/Normal**

When BLC is turned on, the AGC, ES and IRIS operating point is determined by averaging over the center area instead of entire field-of-view, so that a dimly-lit foreground object in the center area can be clearly distinguished from brightly-lit backgrounds. BLC should not be used unless it is needed to compensate for back-lighting. The default setting is Normal.



### **ES (Electronic Shutter) Off/On**

**ES ON:** The camera continuously adjusts the shutter speed from 1/60 (NTSC), 1/50 (PAL) second to 1/100,000 second according to the luminance conditions of the scene.

**ES OFF:** The shutter speed is fixed at 1/60 (NTSC), 1/50 (PAL) second. Place ES in the off position, when auto iris lens are used or flicker is observed under extremely bright fluorescent lighting. In all other lighting, keep ES in the on position for optimum performance. The default setting is ON.

### **AGC (Automatic Gain Control) Off/On**

**AGC ON:** The sensitivity increases automatically when light is low.

**AGC OFF:** A low-noise picture is obtained under a low light condition. The default setting is ON.

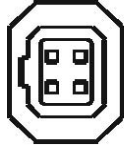
### **LL (Line-Lock) Off/On**

Use this switch to select the sync mode between Internal Sync.(LL off) and Line-Lock (LL on). To synchronize the camera to the internal time base, set the line-lock in the off position. By setting the line-lock on, the camera's vertical synchronization can be driven by the AC signal in the power lines.

**Note:** The cameras feature AC line lock for external synchronization. Using the AC power frequency (60Hz) is possible but not available when using DC or other operation power such as NTSC in 50Hz or PAL in 60Hz power system.

## VD/DD (Auto Iris lens Type)

For video drive auto iris lens, please set the switch to VD. For direct drive iris lens, set the switch to DD. The default setting is DD. Wire the lens cable to the lens connector according to the following table.

<u>Pin1</u>	<u>Pin2</u>	<u>Pin3</u>	<u>Pin4</u>	Lens Connector	
Video Drive	+12V	GND	VD-IRIS	GND	
Direct Drive	Cnt-Cnt+	Drv+	Drv-		

## 6. IRIS Level Control

Brightness Level can be adjusted from the IRIS level VR while using the direct drive lens.

- ↶• Turn counterclockwise to L for a darker picture.
- ↷• Turn clockwise to H for a brighter picture.

## 7. V-Phase Adjustment Screw

The vertical phase may require adjustment to synchronize the vertical phase of the camera with other camera in the system when it is to be used in the line-lock sync mode. Make the adjustment when the vertical phase of the camera does not match with other cameras.

## 8. Mounting Base and Fixing Screws

To use when the mounting bracket is required while mounting the camera. The mounting base can be attached to either the top or the bottom of the camera; fix the mounting base onto the camera by using the 4 supplied fixing screws.

## **9. Video Output Connector**

BNC VBS 1.0 V<sub>p-p</sub>, 75ohm

**1 Power Cable (EQ series)**

**2 DC12V/AC24V Screw Terminals (EQ series “A”)**

**3 Audio Output(optional):**Connect with an audio device, RCA connector

# Installation Instructions

- 1) Remove the cap cover from the top of the lens mount.
  
- 2) To attach a C-mount/CS-mount lens, turn the focal length adjustment ring to the appropriate position. **Note: If a C-mount lens is used, please make sure the focal length adjustment ring is set at C position before fixing the lens.**
  - a) Screw the lens firmly onto the lens mount. Insert the lens plug in the lens connector if the auto iris lens is used.
  
  - b) Tighten the locking screw.
  - c) Connect the video output of the camera to a color monitor or other video device through a 75 ohm type coaxial cable with BNC female connector.
  
  - d) Plug the power cord to the outlet.
  - e) Once the image appears on the monitor, adjust the focus and diaphragm of the lens to obtain the best picture.
  - f) If the subject is not in focus when adjusting focus of lens, do focal length adjustment as following:
    - i) Loosen the locking screw of the focal length adjustment ring.
    - ii) Take picture of subject at a distance more than 20m away from the camera.
    - iii) Rotate the focal length adjustment ring to bring the subject in focus.
    - iv) Tighten the locking screw while the adjustment is completed.

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