



## EVERFOCUS

1/3" Square Metal Case  
DSP Color CCD Camera  
Operation Instructions

Model No. **EM500NH P1, P3, P4**

Please read this manual first for correct installation and operation. This manual should be retained for future reference. The information in this manual was current when published. The manufacturer reserves the right to revise and improve its products. All specifications are therefore subject to change without notice.

### **PRECAUTIONS**

**1. Do not install the camera near electric or magnetic fields.**

Install the camera away from TV, radio transmitter, magnet, electric motor, transformer, audio speakers since the magnetic fields generate from above devices will distort the video images.

**2. Never disassemble the camera nor put impurities in it.**

Disassembly or impurities may result in trouble or fire.

**3. Never face the camera toward the sun.**

Direct sunlight or severe ray may cause fatal damage to sensor and internal circuit.

**4. Keep the power cord away from water and liquid.**

Touching the wet power cord may result in electric shock.

**5. Never install the camera in areas exposed to water, oil or gas.**

Water, oil or gas may result in failure, electric shock or fire.

**6. Cleaning**

Do not touch the surface of sensor by hand directly. Use a soft cloth to remove the dirt from the camera body. Use lens tissue or a cotton swab and ethanol to clean the sensor and the camera lens.

**7. Do not operate the camera beyond the specified temperature, humidity or power source ratings.**

Use the camera at temperatures within 0° ~ 40° C (32° to 104° F) and humidity between 20%~ 80%. The input power source is 12VDC/24VAC.

## **FEATURES**

- 1/3" Sony Super HAD CCD image sensor with approximately 410,000 pixels.
- Over 550 TVL of horizontal resolution.
- Revolutionary integrated 10-bit Digital Signal Processor (DSP) delivers sharp color images and excellent picture quality.
- Low light sensitivity 1.0 Lux/F=1.2.
- Wide-range automatic electronic shutter: up to 1/100,000.
- Manual zoom lens with adjustable viewing range.

## **PACKAGE CONTENTS**

- Camera Unit x 1
- Mounting bracket x 1



- Power/Video Cable x 1



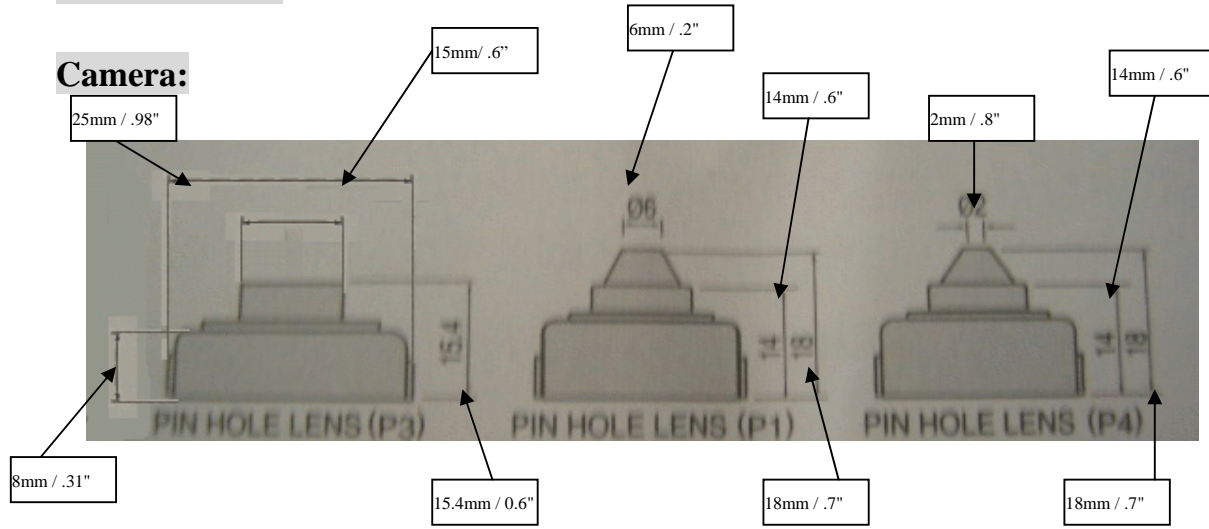
- Screws x 3
- Manual x 1

## SPECIFICATIONS

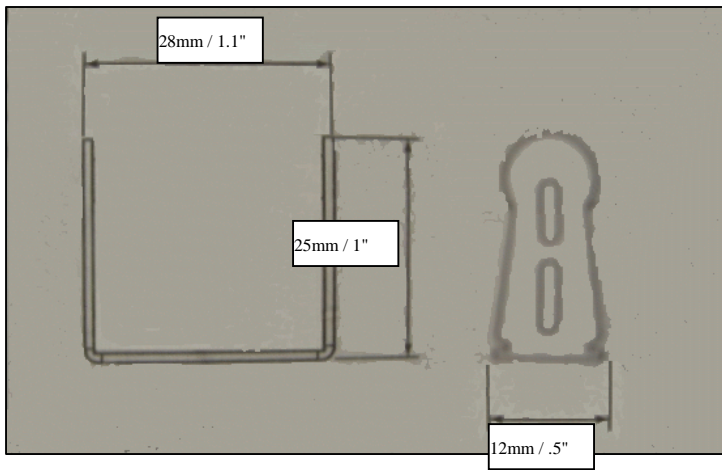
	EM-500NHP1	EM-500NHP1	EM-500NHP1
Lens Size	3.7mm	3.7mm	4.3mm
Lens Type	Conical Pinhole Lens	Flat Pinhole Lens	Super Cone Pinhole Lens
Dimensions	25 x 25mm   0.98 x 0.98 Inches		
Video Format	NTSC		
Image Sensor	Color 1/3" High Res CCD Sony ICX638 Chip		
Scanning System	2:1 Interlace		
Scanning Frequency	H: 15.734 KHz, V: 59.94Hz		
Total Pixels	811 (H) x 508 (V), 410K		
Effective Pixels	Vari-focal lens f=4.0~9.0mm, Fixed Iris		
Horizontal Resolution	550TVL		
Electronic Shutter	1/60 ~ 1/100,000 sec		
S/N Ratio	More than 45db		
Video Output	BNC 1.0Vp-p, 75ohm		
Gamma Correction	0.45		
Sync Mode	Internal Sync		
Power Source	DC12V + 10%		
Power Consumption	12VDC 3.5W max		
Operating Temperature	10° C ~ 45° C / 14~122° F		
Storage Temperature	-20o C ~ 60o C / -4~ 140o F		
Weight	0.3 kg ; 0.7lbs		
Sensitivity	0.2Lux/F-20		
Angle of View	66		

## DIMENSIONS

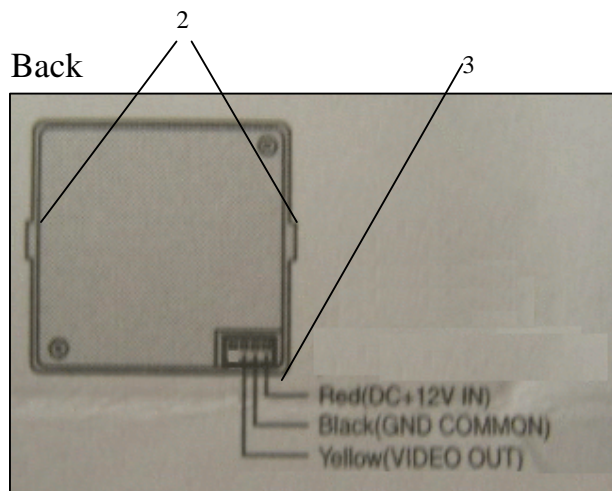
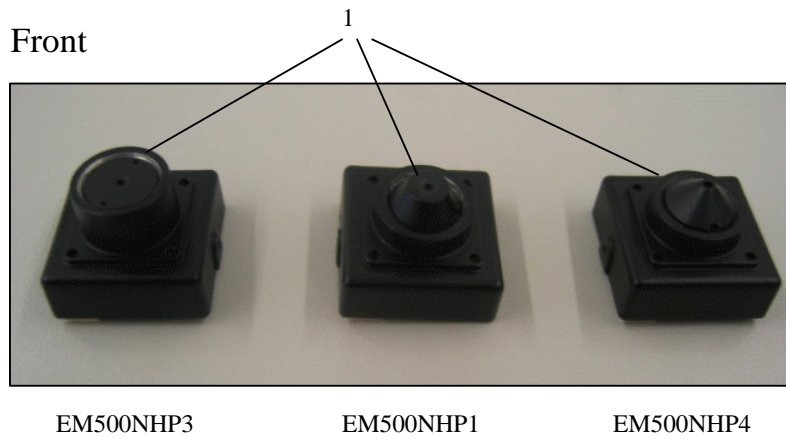
### Camera:



### Bracket:



## CAMERA MAJOR PARTS FUNCTIONS



Camera power/video cable



### (1) Lens

The EMNH series cameras come with 3 types on pinhole lenses.

- Flat - EM500HP3,
- Conical – EM500NHP1
- Super Conical – EM500NHP4

### (2) Screw holes for included mounting bracket.

**(3) Power/video port.**

**(4) Power/video connector to be plugged into the camera.**

**(5) Video Output BNC Connector**

BNC 1.0Vp-p, 75ohm. Use the connector to connect with the video in connector of a monitor.

**(6) Power input**

Use the connector to connect with 12VDC power adaptor.

## **INSTALLATION**

**This section covers detailed steps of the simple installation. Please follow instructions for preventing any unnecessary damage**

### **1. Secure camera mounting bracket to mounting surface.**

- a. Mark 2 screw points in mounting surface.



Figure 1-1

- b. Fix the bracket to the mounting service with included screws. see figure 1-1.

## 2. Fix camera to mounting Bracket.



- Position the camera ready to be mounted on bracket so the power/video connector is on the bottom to ensure that the camera is facing right side up. See arrow in figure 2.1 pointing at the power/video connector on bottom.
- Secure camera on bracket with the fixing screws included.

## 3. Connect power/video cable to camera power/video connector



Figure 3-1

## 4. Connect Power and Video



Figure 4-1

- Connect pigtail (male power adapter) to the camera female power connector. See Figure 3-1.
- Connect power to pigtail wires (pigtail- male power adapter is purchased separately)

**Pigtail Polarity: (Important since DC voltage is used)**

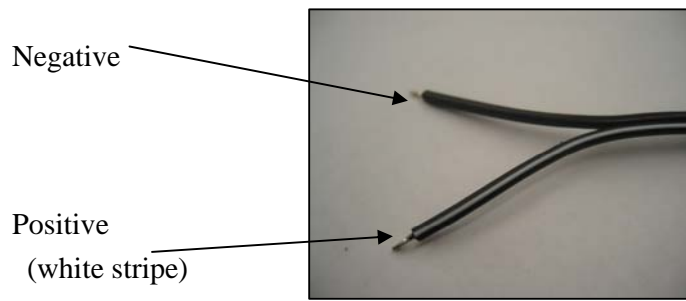


Figure 3-2

Black Wire with white stripe is positive and solid black wire is negative. See figure A4-2.



c. Connect video cable to a BNC female cable run. See figure A4-3.



## **Troubleshooting**

### **No power**

Check to be certain that you have sufficient current or amperage from the power supply.

Amount of current needed depends on voltage. See this manual's spec. sheet for information on power consumption.

### **Picture output is horizontal.**

Depending on camera will be installed on wall or on ceiling, you may have to remove camera module and rotate it so can install for wall or ceiling. **See Installation A step 2** for explanation and steps.

## ***EverFocus Electronics Corp.***

### **Head Office:**

12F, No.79 Sec. 1 Shin-Tai Wu Road,  
Hsi-Chih, Taipei, Taiwan  
TEL: +886-2-26982334  
FAX: +886-2-26982380  
www.everfocus.com.tw

### **USA California Office:**

1801 Highland Ave. Unit A  
Duarte, CA 91010, U.S.A.  
TEL: +1-626-844-8888  
FAX: +1-626-844-8838  
www.everfocus.com

### **USA New York Office:**

415 Oser Avenue Unit S  
Hauppauge, NY 11788  
TEL: 631-436-5070  
FAX: 631-436-5027  
www.everfocus.com

### **Europe Office:**


Albert-Einstein-Strasse 1  
D-46446 Emmerich, Germany  
TEL: 49-2822-9394-0  
www.everfocus.de

### **China Office:**

Room B-05D-1, KESHI PLAZA , Shangdi  
Information Industry Base,  
Haidian District, Beijing China  
100085  
TEL: +86-10-62973336/37/38/39  
FAX: +86-10-62971423  
www.everfocus.com.cn

### **Japan Office:**

1809 WBG MARIBU East 18F,  
2-6 Nakase.Mihama-ku.  
Chiba city 261-7118, Japan  
TEL: +81-43-212-8188  
FAX: +81-43-297-0081  
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