

# True Day/Night IR Color camera

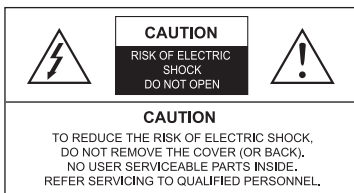
## INSTRUCTION MANUAL



- \* Resolution  400TVL Super II HAD  
 400TVL Ex-view HAD  
 500TVL Super II HAD  
 500TVL Ex-view HAD  
 560TVL Super II HAD  
 560TVL Ex-view HAD
- \* Lens -Varifocal Lens  
Iris Mode  Manual  DC  
 2.6-6.0mm  4.0-9.0mm  
 9.0-22.0mm  
-Monofocal Fixed Iris  
 2.9mm  3.6mm  4.3mm  
 6.0mm  8.0mm  12mm  
 16mm  25mm  35mm
- \* Focus Adjustment  Internal  External
- \* Bracket  UAB  Swivel
- \* Sunshield  Yes  No
- \* Cable -Waterproof Connector  
 2+4Feet  1+2Feet  
 Other  
-w/o Waterproof Connector  
 1Ft  3Ft  4Ft  18Ft  
 60Ft  100Ft  170Ft  
 Other  
-Ext. cable w/Waterproof conn.  
 15ft  80ft  170ft  
 Other
- \* Power  12VDC  24VAC

## Dear Customers!

By selecting this product, you have decided to use a professional device that guarantees highest quality and reliability. We would like to thank you very much for your confidence and kindly ask you to read the following instructions carefully before installation and operation in order to take full advantage of all quality features regarding this product.



The lightning flash with an 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 appliance.

## INFORMATION

This equipment has been tested and found to comply with 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.

## WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

## CAUTION – To prevent electric shock and risk of the fire hazards

- Do NOT use power source other than that specified.
- Do NOT expose this appliance to rain or moisture.

This installation should be made by a qualified service person and should conform to all local codes.

## Table of contents

1. Precautions	4
2. Limitation of liability	5
3. Disclaimer of warranty	5
4. Package	6
5. Key Features	7~8
6. Applications	8
7. Wiring option (Waterproof cable configuration)	9~10
8. External Adjustment (Option)	10
9. DIP S/W Adjustment	11
10. Trouble shooting guide	12~13
11. Dimension(mm)	13
12. Specification	14~16

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## 1. Precautions

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- Please read the manual carefully before the installation in order to make use the camera to be set up correctly and to have the best picture quality.
- Please keep the manual in good condition for your future reference and service application.
- Installation and services should only be carried out by an authorized personnel according to local safety regulations.
- If any liquid or solid matter gets into the housing, immediately disconnect the camera from power supply and have it checked by your authorized dealer before reusing.
- Avoid installing the camera at extremely hot or cold places.
- If you are not a certified person, never try to dismantle the camera. To avoid electric shock, never remove the screws or covers. There are no parts inside that need maintenance by the user. All maintenance should be carried by qualified personnel.
- Avoid installing the camera at a place of high humidity.
- Avoid installing the camera at the place exposed to gas or oil.
- Keep the top glass of the lens always clean in order to obtain the best picture quality all the time. Be careful not to be stained by fingerprint.
- Don't face the camera directly toward sunlight or sunlight reflecting area. CCD may go defective at this condition.
- Please give a special attention to keep the unit from dangerous drop or external shock during the process of transportation or handling.
- Never try to touch the camera in wet hand. It may cause an electric shock.
- Do not expose the camera to radioactivity. It causes a serious damage on the CCD.
- Install away from electric or magnetic fields.

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## 2. Limitation of liability

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This publication is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for any particular purpose, or noninfringement of the third party's right. This publication could include technical inaccuracies or typographical errors. Changes are added to the information herein, at any time, for the improvements of this publication and/or the corresponding product(s).

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## 3. Disclaimer of warranty

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In no event shall seller be liable to any party or any person, except for replacement or reasonable maintenance of the product, for the cases, including but not limited to below :

- (1) Any damage and loss, including without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product;
- (2) Personal injury or any damage caused by inappropriate use or negligent operation of the user;
- (3) unauthorized disassemble, repair or modification of the product by the user;
- (4) Inconvenience or any loss arising when images are not displayed, due to any reason or cause including any failure or problem of the product;
- (5) Any problem, consequential inconvenience, or loss or damage, arising out of the system combined by the devices of third party.
- (6) Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the result of that surveillance-camera's picture, including saved data, for some reason, becomes public or is used for the purpose other than surveillance.

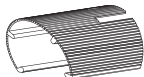
## 4. Package



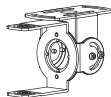
True Day/Night IR Color  
camera 1EA



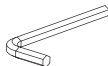
Instruction manual  
1EA



Sunroof  
1EA



U-Bracket  
1EA



L-Wrench 3Ø  
1EA



PH MS Screw  
1EA



Plastic anchor  
4EA



Mounting screws  
4EA

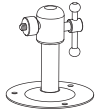


Socket head  
Screw 2EA



UNC 1/4-20 6.5L  
2EA

[ option ]



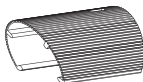
Swivel Mounting  
Bracket 1EA



Mounting screws  
3EA



Plastic anchor  
3EA



Sunroof  
1EA

## 5. Key features

### \* DUAL FILTER MACHANISM FOR VARIFOCAL LENS & FOCUS ENHANCEMENT TECHNOLOGY FOR MONOFOCAL LENS

We have made our long endeavour to develop a perfect Infra-red combined camera for high quality night vision. It utilizes several unique technologies designed by ourselves resulting in the world best performing Day&Night color camera. It is commonly regarded that conventional IR cameras have some inevitable technical limitations of overheating, short-term IR life, defocusing at night view, moisture condensation, limitation of getting clear image with IR beam, IR distance problem by using small number of LEDs etc. The unit now provides highly increased performance with all points improved a lot. Best of all, the camera guarantees a perfect solution of reliable night vision for long time with no worry of damages in IR performance by the time passes after installation. Even under extreme conditions such as fire and terrorist attacks, our IR camera will capture clear image to assist the rescue team to act responsibly and store important evidences for future review.

### \* EX-Clear view at total darkness ( 0 Lux /F2.0)

With the built-in high sensitive IR LEDs plus High sensitive 1/3" CCD camera, it offers an extraordinary clear view in pitch black darkness. This makes it possible to have covert night-time with no need to use an electric lighting.

### \* Live & vivid picture quality with video enhance technology

It is our own unique technology enabling a normal CCD camera to provide an extremely clear vision. With the help of this function, cameras also perform a greater resolution and better low lux sensitivity.

### \* Excellent color reproduction close to the human eye performance.

Producing a true natural coloration which is close to the performance of human eye adds its value to maximum. This wonderful achievement is an integrated output from a perfect combination of sophisticated hardware and software technology, including 1/3" CCD sensor ,our own noise-free power circuit and the company's know-how.

### \* Crisp clear picture quality with IR responded automatic movable filter(For Varifocal lens)

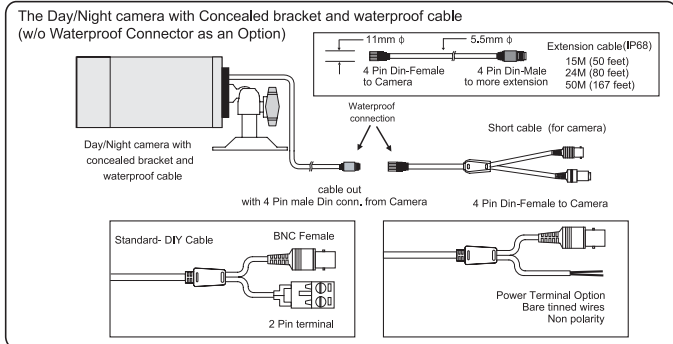
Most of CCD cameras have a focus distortion problem with IR illumination. Our camera has the solution to correct this problem with automatic filter movement between day and night.

### \* Complete weatherproof mechanism

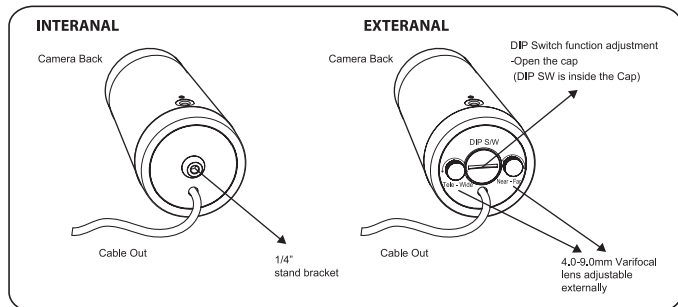
The unit is produced and passed for moisture condensation-free on the glass against any harsh weather condition.



## 7. Wiring option (Waterproof cable configuration)



## 8. External Adjustment (Option)



## 9. DIP S/W Adjustments

### \* SS-HQ1

Ex-factory set up



Switch No.	Function	ON	OFF
1	BLC	BLC ON	BLC OFF
2	AGC	AGC Normal	AGC Max
3	White Balance	Auto Tracing White	Push lock

### \* SS-11X

Ex-factory set up



Switch No.	Function	ON	OFF
1	BLC	BLC ON	BLC OFF
2	AGC	AGC Normal	AGC Max
3	White Balance	Auto Tracing White	Push lock

### \* SS-1M

Ex-factory set up



Switch No.	Function	ON	OFF
1	BLC	BLC ON	BLC OFF
2	AGC	AGC Normal	AGC Max
3	Flickerless	Flickerless OFF	Flickerless ON

## 10. Trouble shooting guide

If the unit continues to be fault after the following adjustments please consult you dealer.

### **When the IR LED does not work**

- \* 12VDC – Please check if the power unit is regulated or not. Please use 12VDC regulated power unit only.
- \* 24VAC – Please check if the power source is correct or not.

### **When the picture is not displayed on the monitor**

- \* Please check if the AC–DC power unit is plugged into the AC power outlet firmly.
- \* Please check if there are any misconnection in the cabling.

### **When the picture is blurred**

- \* Please check if the lens is contaminated. Please clean the lens (on both sides) and the front glass surface gently with soft cloth or tissue.
- \* Please check if the lens is focused properly.
- \* Please check if the Dip switch is set properly.
- \* Please check if the monitor is set to brightly. Adjust the brightness or contrast level on the monitor correctly.

### **When the color displayed on the monitor is not correct**

- \* Please check if the monitor's color adjustment is set correctly.
- \* Please check if the camera is changed to BW mode under 5 lux.

### **When the picture is too dark**

- \* Please check if the monitor's contrast is set to too dark.
- \* Please check if the camera is positioned toward a door or window.  
If so, please change the BLC switch among the Dip switch configuration to on mode.

### **When the picture is too bright**

- \* Please check if the monitor's brightness control is too high.
- \* Please check if the camera is set to BLC on under normal lighting conditions. (i.e. when the camera is not pointed toward a brightly lit area.)  
Please move the BLC select switch to the BLC off position.

### **When there is noise on the picture in dark illumination conditions**

- \* The camera picture becomes noisy under AGC Max mode in order to increase the video gain in poor lighting conditions. Please move the AGC switch to off position if it is not required.

### **When the picture is not clear on the monitor**

- \* Please check if the monitor is set to correctly.
- \* Please check if the camera is pointed towards an area where too much light comes in.  
Adjust the direction of the camera in this case.

## 10. Trouble shooting guide

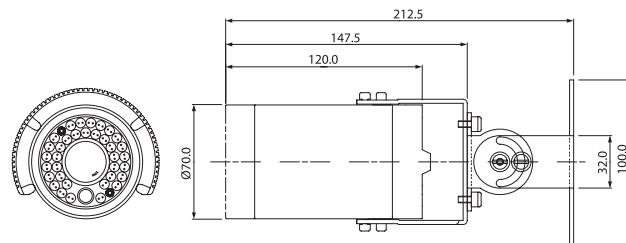
### **When the picture is flickering**

- \* Please check if the camera is pointed at the fluorescent lighting or bright sunlight.  
Use a visor or adjust the direction of the camera in this case.
- \* Please check if the Iris mode is set to correctly.

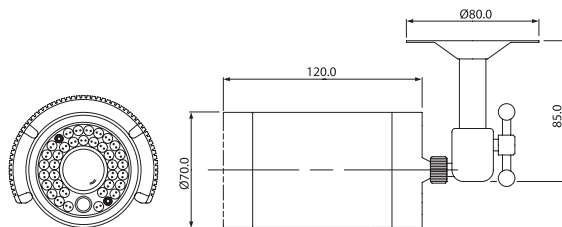
### **When the picture is distorted**

- \* Please check if the lens is defective.
- \* Please check if the camera is PAL/CCIR(50Hz) in an NTSC/EIA(60Hz) area or vice versa.

## 11. Dimension (mm)



< Universal Angle Mount >



< Swivel Mount >

## 12. Specification

Description					Super Hi-Res Long Range IR LED Camera (SS-HQ1)			
Image sensor	1/3" Super HAD II			1/3" Ex-view HAD				
Effective Pixels	NTSC : Hi-Res 768(H)X494(V), PAL : Hi-Res 752(H)X582(V)							
H.Resolution	560TVL (Day) / 600TVL (Night)							
Synchronizing system	Internal	Line Lock	Internal	Line Lock				
Scanning system	NTSC 525 Lines PAL 625 Lines 2:1 Interlaced							
Video output	1.0Vp-p Composite, 75 Ohms							
S/N ratio	More than 50 dB (AGC Off)							
Min. Illuminator	0.1 Lux/F1.4 w/o IR LED, 0 Lux/F1.4 w/ IR LED			0.01 Lux/F1.4 w/o IR LED, 0 Lux/F1.4 w/ IR LED				
BLC	On/Off							
White balance	2100°K ~ 9100°K Auto							
Gain Control	Nor / Max							
Gamma correction	$\gamma = 0.45$							
Smear Effect	0.005%							
Shutter speed	NTSC : 1/60 ~ 1/100,000 sec PAL : 1/50 ~ 1/100,000 sec							
LED spectrum	12VDC : 850nm Visible IR LED x 35EA(Varifocal) & 50EA(Monofocal) 24VAC : 850nm Visible IR LED x 36EA(Varifocal) & 50EA(Monofocal)							
IR Beam distance	Monofocal Super HAD : 2-40M Ex-view : 2-50M Varifocal Super HAD : 2-35M Ex-view : 2-40M							
MTBF	20,000 hours							
Power source	12VDC	24VAC	12VDC	24VAC				
Operation current	LED OFF : 200mA LED ON : 600mA	LED OFF : 120mA LED ON : 250mA	LED OFF : 200mA LED ON : 600mA	LED OFF : 120mA LED ON : 250mA				
Lens Standard - VF lens Option	4mm-9mm Varifocal Auto DC iris lens 4mm-9mm Varifocal Manual iris lens 2.6 - 6mm Varifocal Auto DC iris lens 2.6 - 6mm Varifocal Manual iris lens 9 - 22mm Varifocal Auto DC iris lens 9 - 22mm Varifocal Manual iris lens							
- Board lens option	2.9mm(120°), 3.6mm(92°), 4.3mm(78°), 6mm(54°) 8mm(39°), 12mm(26°), 16mm(19°), 25mm(13.8°), 35mm(9.8°)							
Operating Temperature	14° F ~ 122° F (-10° C ~ +50° C)							
Humidity	Within 90% RH							
Output Terminal	BNC or RCA for Video, DC Jack or bear tinned wires for Power							
Measurement (mm)	70(D)x100(L)-Internal Focus Adjustment w/o Hood 70(D)x120(L)-External Focus Adjustment w/o Hood							
Weight(Approx.g)	1,800							
Optional Feature 1	Invisible 940nm							
Optional Feature 2	External Audio with C-Microphone " - 35dB / mV "							

## 12. Specification

Description					Super Hi-Res Long Range IR LED Camera (SS-11X)			
Image sensor	1/3" Super HAD II			1/3" Ex-view HAD				
Effective Pixels	NTSC : Hi-Res 768(H)X494(V), Med-Res 512(H)X492(V) PAL : Hi-Res 752(H)X582(V), Med-Res 500(H)X582(V)							
H.Resolution	Med Res : 400TVL Hi-Res : 500 TV Lines							
Synchronizing system	Internal	Line Lock	Internal	Line Lock				
Scanning system	NTSC 525 Lines PAL 625 Lines 2:1 Interlaced							
Video output	1.0Vp-p Composite, 75 Ohms							
S/N ratio	More than 50 dB (AGC Off)							
Min. Illuminator	0.1 Lux/F1.4 w/o IR LED, 0 Lux/F1.4 w/ IR LED			0.01 Lux/F1.4 w/o IR LED, 0 Lux/F1.4 w/ IR LED				
BLC	On/Off							
White balance	2100°K ~ 9100°K Auto							
Gain Control	Nor / Max							
Gamma correction	$\gamma = 0.45$							
Smear Effect	0.005%							
Shutter speed	NTSC : 1/60 ~ 1/100,000 sec PAL : 1/50 ~ 1/100,000 sec							
LED spectrum	12VDC : 850nm Visible IR LED x 35EA(Varifocal) & 50EA(Monofocal) 24VAC : 850nm Visible IR LED x 36EA(Varifocal) & 50EA(Monofocal)							
IR Beam distance	Monofocal Super HAD : 2-40M Ex-view : 2-50M Varifocal Super HAD : 2-35M Ex-view : 2-40M							
MTBF	20,000 hours							
Power source	12VDC	24VAC	12VDC	24VAC				
Operation current	LED OFF : 150mA LED ON : 550mA	LED OFF : 100mA LED ON : 200mA	LED OFF : 150mA LED ON : 550mA	LED OFF : 100mA LED ON : 200mA				
Lens Standard - VF lens Option	4mm-9mm Varifocal Auto DC iris lens 4mm-9mm Varifocal Manual iris lens 2.6 - 6mm Varifocal Auto DC iris lens 2.6 - 6mm Varifocal Manual iris lens 9 - 22mm Varifocal Auto DC iris lens 9 - 22mm Varifocal Manual iris lens							
- Board lens option	2.9mm(120°), 3.6mm(92°), 4.3mm(78°), 6mm(54°) 8mm(39°), 12mm(26°), 16mm(19°), 25mm(13.8°), 35mm(9.8°)							
Operating Temperature	14° F ~ 122° F (-10° C ~ +50° C)							
Humidity	Within 90% RH							
Output Terminal	BNC or RCA for Video, DC Jack or bear tinned wires for Power							
Measurement (mm)	70(D)x100(L)-Internal Focus Adjustment w/o Hood 70(D)x120(L)-External Focus Adjustment w/o Hood							
Weight(Approx.g)	1,800							
Optional Feature 1	Invisible 940nm							
Optional Feature 2	External Audio with C-Microphone " - 35dB / mV "							



## 12. Specification

<b>Description</b>	Super Hi-Res Long Range IR LED Camera (SS-1M)			
<b>Image sensor</b>	1/3" Super HAD		1/3" Ex-view HAD	
<b>Effective Pixels</b>	NTSC : Hi-Res 768(H)X494(V), Med-Res 512(H)X492(V) PAL : Hi-Res 752(H)X582(V), Med-Res 500(H)X582(V)			
<b>H.Resolution</b>	Med Res : 400TVL Hi-Res : 500 TV Lines			
<b>Synchronizing system</b>	Internal	Line Lock	Internal	Line Lock
<b>Scanning system</b>	NTSC 525 Lines PAL 625 Lines 2:1 Interlaced			
<b>Video output</b>	1.0Vp-p Composite, 75 Ohms			
<b>S/N ratio</b>	More than 50 dB (AGC Off)			
<b>Min. Illumination</b>	0.1 Lux/F1.4 w/o IR LED, 0 Lux/F1.4 w/ IR LED		0.01 Lux/F1.4 w/o IR LED, 0 Lux/F1.4 w/ IR LED	
<b>BLC</b>	On/Off			
<b>White balance</b>	2100°K ~ 9100°K Auto			
<b>Gain Control</b>	Nor / Max			
<b>Gamma correction</b>	$\gamma = 0.45$			
<b>Smear Effect</b>	0.005%			
<b>Shutter speed</b>	NTSC : 1/60 ~ 1/100,000 sec PAL : 1/50 ~ 1/100,000 sec			
<b>LED spectrum</b>	12VDC : 850nm Visible IR LED x 35EA(Varifocal) & 50EA(Monofocal) 24VAC : 850nm Visible IR LED x 36EA(Varifocal) & 50EA(Monofocal)			
<b>IR Beam distance</b>	Monofocal Super HAD : 2-40M Ex-view : 2-50M Varifocal Super HAD : 2-35M Ex-view : 2-40M			
<b>MTBF</b>	20,000 hours			
<b>Power source</b>	12VDC	24VAC	12VDC	24VAC
<b>Operation current</b>	LED OFF : 150mA LED ON : 550mA	LED OFF : 100mA LED ON : 200mA	LED OFF : 150mA LED ON : 550mA	LED OFF : 100mA LED ON : 200mA
<b>Lens Standard</b> - VF lens Option  - Board lens option	4mm-9mm Varifocal Auto DC iris lens 4mm-9mm Varifocal Manual iris lens 2.6 - 6mm Varifocal Auto DC iris lens 2.6 - 6mm Varifocal Manual iris lens 9 - 22mm Varifocal Auto DC iris lens 9 - 22mm Varifocal Manual iris lens  2.9mm(120°), 3.6mm(92°), 4.3mm(78°), 6mm(54°) 8mm(39°), 12mm(26°), 16mm(19°), 25mm(13.8°), 35mm(9.8°)			
<b>Operating Temperature</b>	14° F ~ 122° F ( -10° C ~ +50° C )			
<b>Humidity</b>	Within 90% RH			
<b>Output Terminal</b>	BNC or RCA for Video, DC Jack or bare tinned wires for Power			
<b>Measurement (mm)</b>	70(D)x100(L)-Internal Focus Adjustment w/o Hood 70(D)x120(L)-External Focus Adjustment w/o Hood			
<b>Weight(Approx.g)</b>	1,800			
<b>Optional Feature 1</b>	Invisible 940nm			
<b>Optional Feature 2</b>	External Audio with C-Microphone " - 35dB / mV "			

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