

VIDEOLOGY®

IMAGING SOLUTIONS INC.

Instruction Manual

20/21VC724TDN True Day/Night Zoom Weatherproof IR Color Camera

Information may change without notice.

This document provides technical information for the user. Videology reserves the right to modify the information in this document as necessary. The customer should make sure that they have the most recent manual version. Videology holds no responsibility for any errors that may appear in this document.

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Thank you for purchasing this COLOR VIDEO CAMERA.

Before operating the camera, confirm that you have the right camera model and proper power voltage.

In order to help you understand this manual, we'll introduce our model's description.

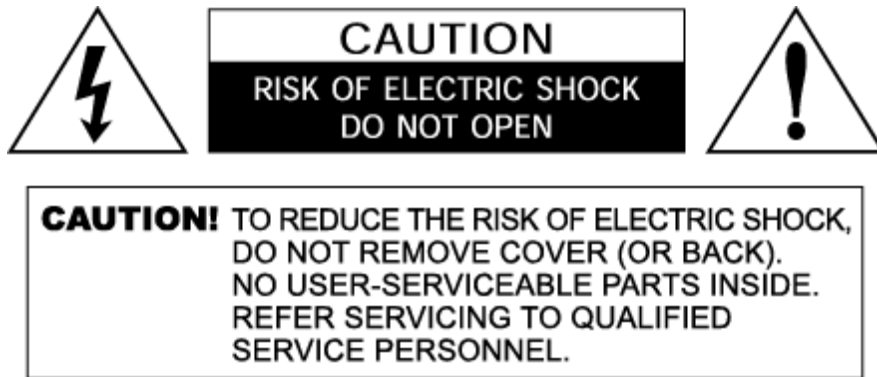
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1. History:

Revision	Issue Date	Reason	CN#
Rev A	05-07-2008	Initial release	08-0092

2. User Information

2.1. Warning



2.2. Explanation of two Symbols



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of un-insulated "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.

THE GRAPHIC SYMBOLS WITH SUPPLEMENTAL MARKING ARE ON THE BOTTOM OF THE SYSTEM.

"WARNING-TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THE UNIT TO RAIN OR MOISTURE"

2.3. 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 their own expense.

2.4. WARNING

The manufacturer could void the user's authority to operate the equipment.

CAUTION To prevent electric shock and risk of fire hazards:
Do NOT use power sources except for that specified.

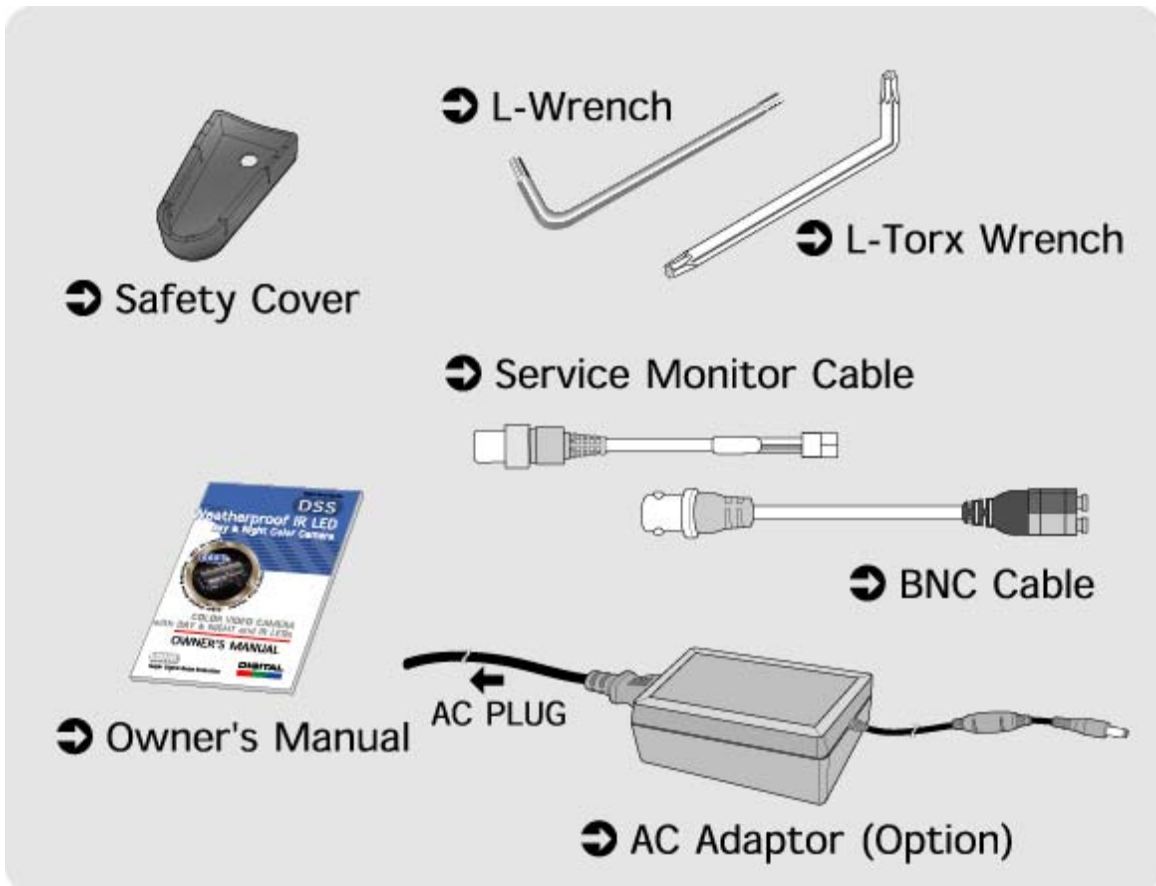
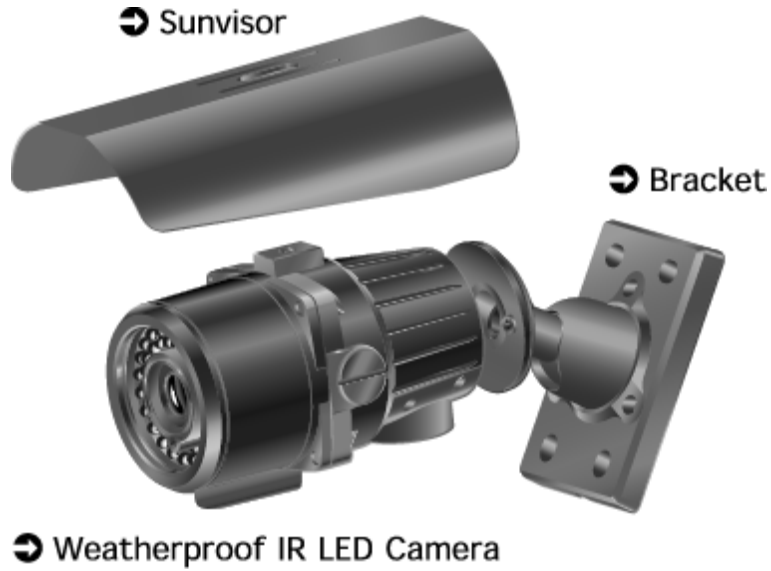
This installation should be made by a qualified service person and should abide to all local codes.

3. Precautions

- Do not install the camera in extreme temperature conditions.
Do use the camera under conditions where temperatures are within -10°C to 50°C.
Especially be careful for ventilation under high temperature.
(with heater : -30°C ~ 50°C)
- Do not install or use the camera in an environment where the humidity is high.
It can cause poor image quality.
- Do not install the camera under unstable lighting conditions.
Severe lighting change or flicker can cause the camera to work improperly.
- Never use the camera close to a gas or oil leak.
It can cause malfunctions to occur.
- Do not disassemble the camera.
There are no user-serviceable parts inside it.
- Do not drop the camera or subject it to physical shocks.
It can cause malfunctions to occur.
- Never keep the camera face in strong light directly.
It can damage the CCD.
- Note
When this camera is installed near wireless communication devices that emits a strong electromagnetic field, irregularity such as noise on the monitor may appear.

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4. Composition



5. Features

1. Super High Resolution
The horizontal resolution of 550 TV lines can be achieved by using a high density CCD having 410K effective pixels, which provides clean, noiseless and reliable pictures.
2. SDNR (Super Digital Noise Reduction)
This camera can reduce video noise, and improve the S/N ratio. SDNR also allows this camera to show a clear and exact image even in a gloomy place.
3. High Sensitivity (Digital Slow Shutter)
This camera can automatically detect darkness or night and brighten the image. This camera can accumulate up to 32 fields to adjust the grade darkness.
4. IR LED
Determines whether IR LED light will be on/off at night, for use of external IR LED lamp when Day & Night mode is on.
 - D/N ON: built-in IR LED on.
 - D/N OFF: built-in IR LED off.
5. Digital Zoom Function
This camera can magnify its image in the mode of D-ZOOM up to twice (x2) that of the real image.
6. Electronic Iris
Electronic iris shutter is automatically controlled at the speed of 1/60 ~ 120,000sec (NTSC models), 1/50 ~ 120,000sec (PAL models).
7. Fan / Heater
 - Turns on /off automatically depending on the internal temperature of the camera.
 - a. Fan ON: over 45°C
 - b. Heater ON: under 10°C

6. Name and Function of Each Part

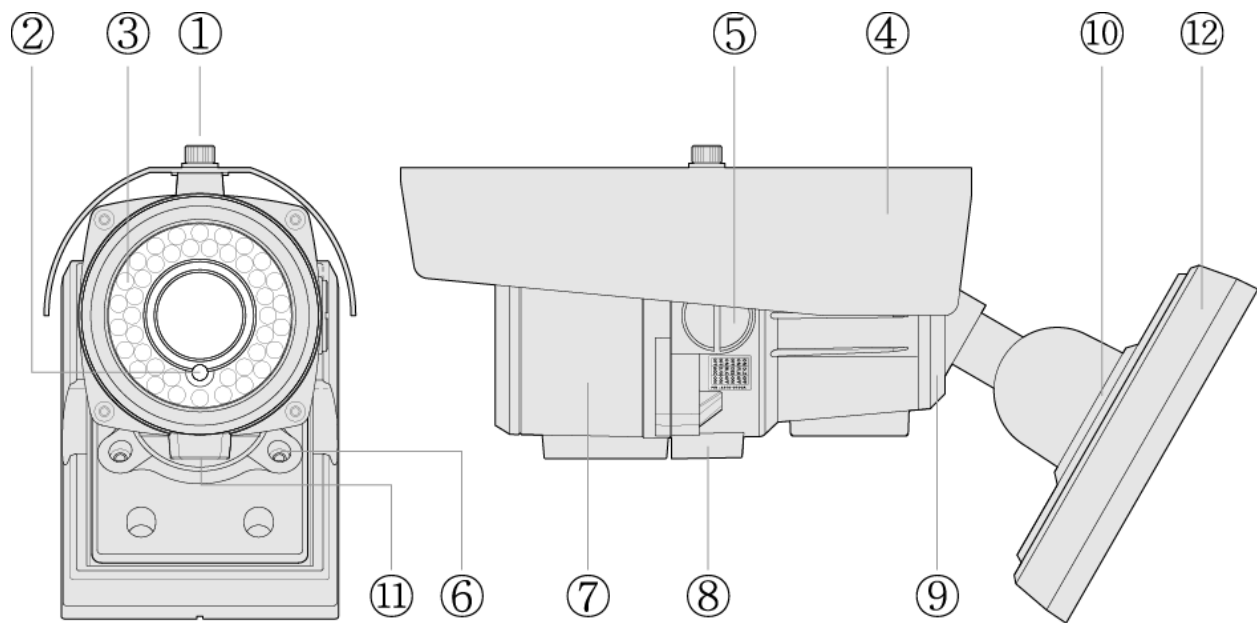
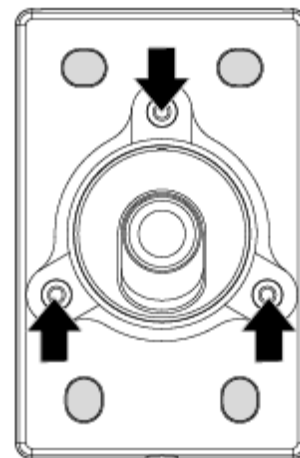
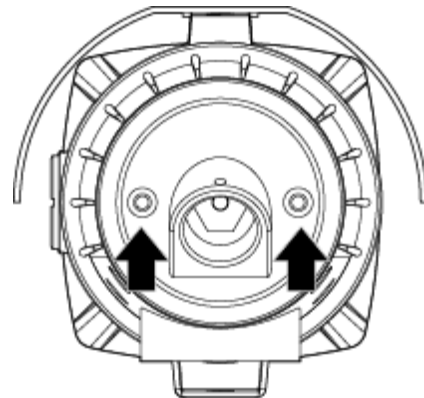


Figure 1. Name and Function of Each Part

1. Fixing Bolt for Sunvisor: You can unscrew the bolt in order to adjust the sunvisor.
2. CDS Sensor
3. IR LED (Infrared LED): Automatically controlled according to light condition.
4. Sunvisor: To reduce direct sunlight and protect the camera unit from rain or snow.
5. Function Selection
6. Mounting Bracket Fixing Bolt (Wrench Bolt: rear- 2EA & bracket- 3EA)
Fix the camera main body to bracket by wrench bolt.
7. Front body
8. Main body
9. Rear Body
10. Bracket
11. Safety Cover
12. Wall Mount Bracket



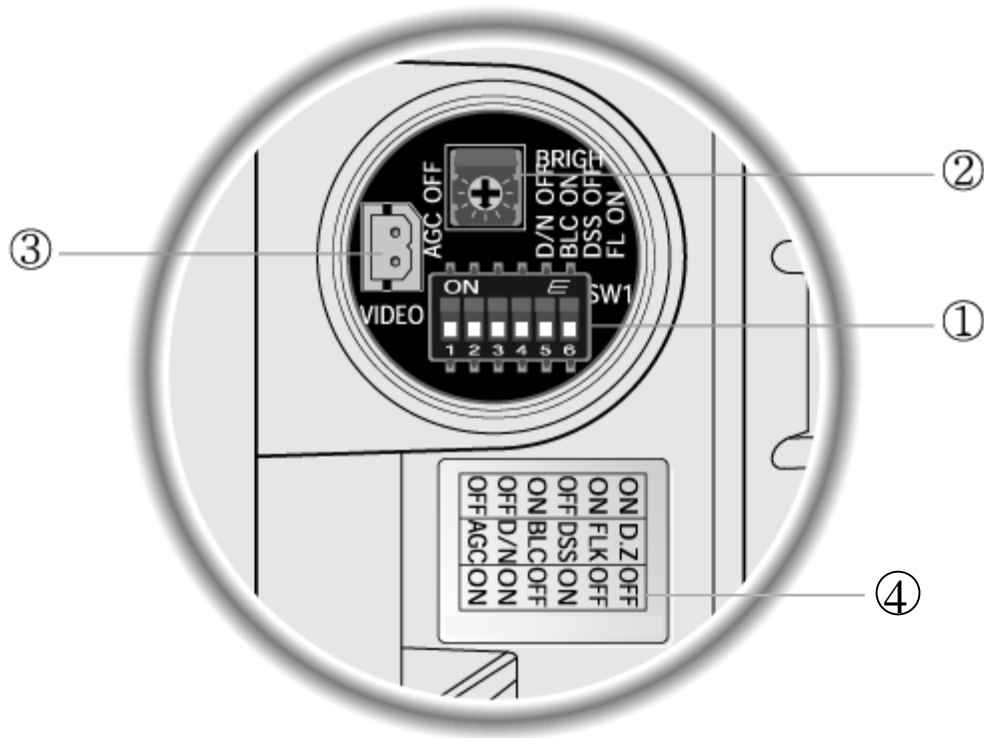


Figure 2. Function Selection Switch

1. Function Selection Switch

- AGC (Automatic Gain Control): With AGC ON, the camera's sensitivity is automatically increased when the level of ambient light drops. AGC function automatically controls signal gain in the maximum range of 28dB.
- D/N (Day & Night ON/ OFF): This camera can switch to COLOR mode to support the best color image during the day time and switch to the B/W mode for a clear image during the night time.
- BLC (Back Light Compensation): This feature would be useful when the camera is facing an object that has excessive light behind it. BLC prevents the center of the object from becoming too dark. E.g.: Video camera in the store facing the entrance doors.
- DSS (Digital Slow Shutter): This camera can automatically detect darkness and support it to take a clear and bright image. As the grade of darkness changes, the camera fields (32) change.
- FL (Flickerless): If the camera is used with 50Hz fluorescent lighting, there maybe a flicker on the screen. In this case, the FL switch should be set to the ON position. But the FL switch should be set to the OFF position if the 60Hz power source is used.
- D-ZOOM (Digital Zoom): This camera can magnify its image up to twice (x2) that of the real image.

2. DC LEVEL Adjustment V.R.

Used to adjust video output level of DC driven auto iris lens or ELC mode. When the brightness control of the monitor does not operate correctly.

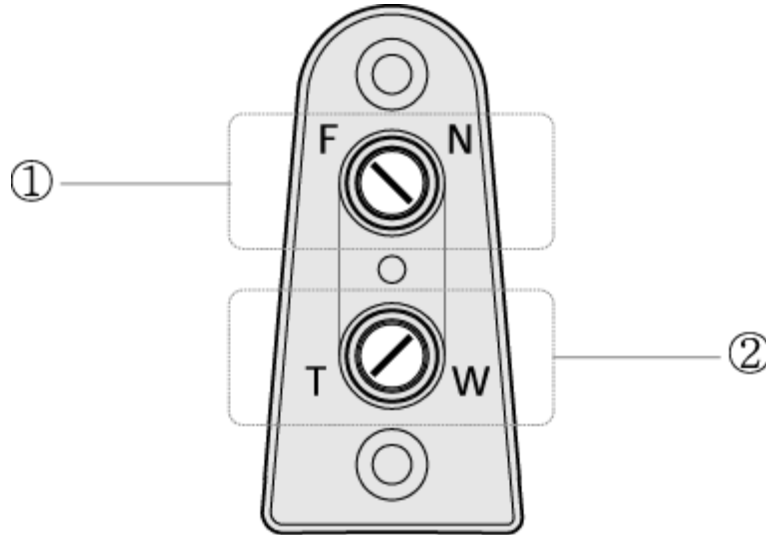
3. VIDEO OUT Connector: Used for installation and service.

4. Default Position

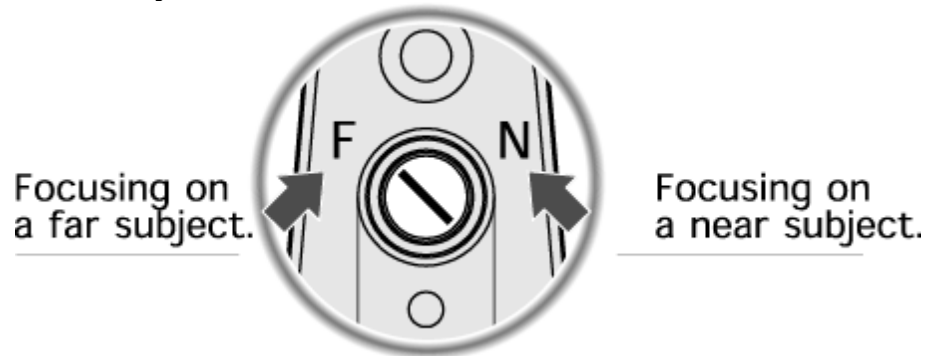
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6.1. External Lens Adjustment of Zoom and Focus

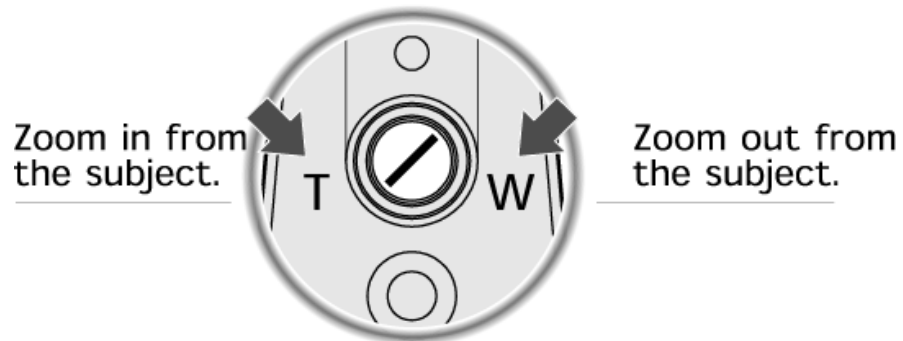
The lens control grooves are exposed for easy focus & zoom adjustment.



1. External Focus Adjustment



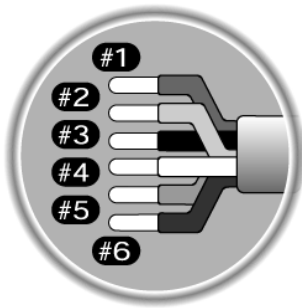
2. External Zoom Adjustment



A Safety Cover is provided for concealing the grooves to protect your settings.

7. Installation

- Connecting to Power Supply
- For AC 24V / DC 12V Power Type
 - The wire is non-polarized.
 - Use AC 24V power source or DC 12V power source.
- For DC 12V Power Type
 - The wire is polarized.
 - Use DC 12V power source.

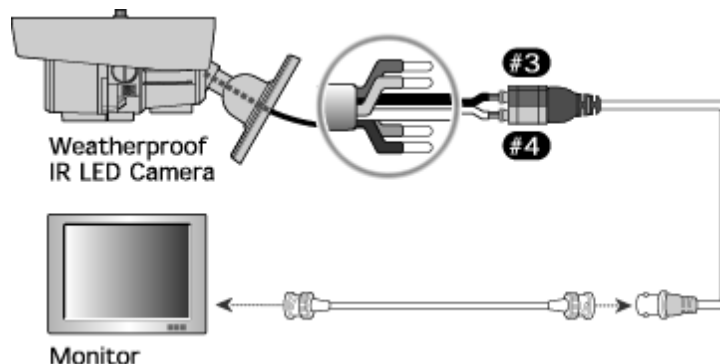


No.	Line Color	Function
#1	RED	12VDC / 24VAC (H)
#2	ORANGE	GND/ 24VAC (N)
#3	BLACK	GND (VIDEO)
#4	YELLOW	VIDEO OUT
#5	GREEN	Not Used
#6	BROWN	Not Used

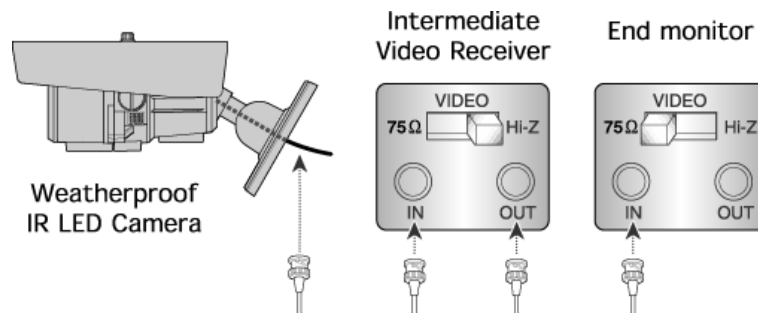
7.1. Connecting to Monitor

For Video Output Model

Connect the VIDEO out cable to the monitor's video in jack.



- The connecting method varies with each device. Please refer to the manual supplied with that device.
- Connect the cable after power is turned off.
- Set the 75Ω/ Hi-Z selection switch as shown below if you have an intermediate device.



8. Specifications

	20VC724TDN NTSC	21VC724TDN PAL
Electrical		
Image Sensor	1/3" Sony super HAD CCD	
Active Pixels (HxV)	768 x 494 (380K)	752 x 582 (440K)
Resolution	550 TVL	
Scanning System	2:1 interlace	
Scanning Frequency (HxV)	15.734 KHz x 59.94 Hz	15.625 KHz x 50 Hz
Sensitivity	Day .3 lux Night 0.00 lux (IR LED on) – 130ft range	
Synchronization	Internal	
Signal To Noise Ratio	> 50dB (AGC off)	
IR LED And CDS Sensor	IR LED (850nm, 42 EA) CDS sensor (1 EA)	
Gain	AGC on/off	
Flickerless Mode	On / off	
White Balance	Auto	
Back Light Compensation	On / off	
Day/Night	On / off	
Digital Slow Shutter	Max 32x (on / off)	
Digital Zoom	2x (on / off)	
Digital Noise Reduction	Auto	
Video Output	1Vp-p (75 ohms, composite)	
Power Supply	24VAC / 12VDC	
Power Consumption	.458mA	
Environmental		
Ambient Operating Temperature	-10° C ~ 45° C (14° F ~ 113° F)	
Storage Temperature	-20° C ~ 65° C (-04° F ~ 149° F)	
Mechanical		
Dimensions WxHxD	83mm x 160.4mm (3.26" x 6.31")	
Weight	3.2 kg (7.1 lbs)	
Lens	3.8 – 9.5mm DCAI F1.2, 2x digital zoom	
Fan/Heater	Built in	
Construction	Diecast aluminum	
Body Color	Dark grey	
Application	Indoor / outdoor	
Accessories		
Included	Sun shield & wall bracket	
Optional	60PR24V2.08 24VAC power supply	
Approbations		
Approbations	CE, UL	

9. Troubleshooting

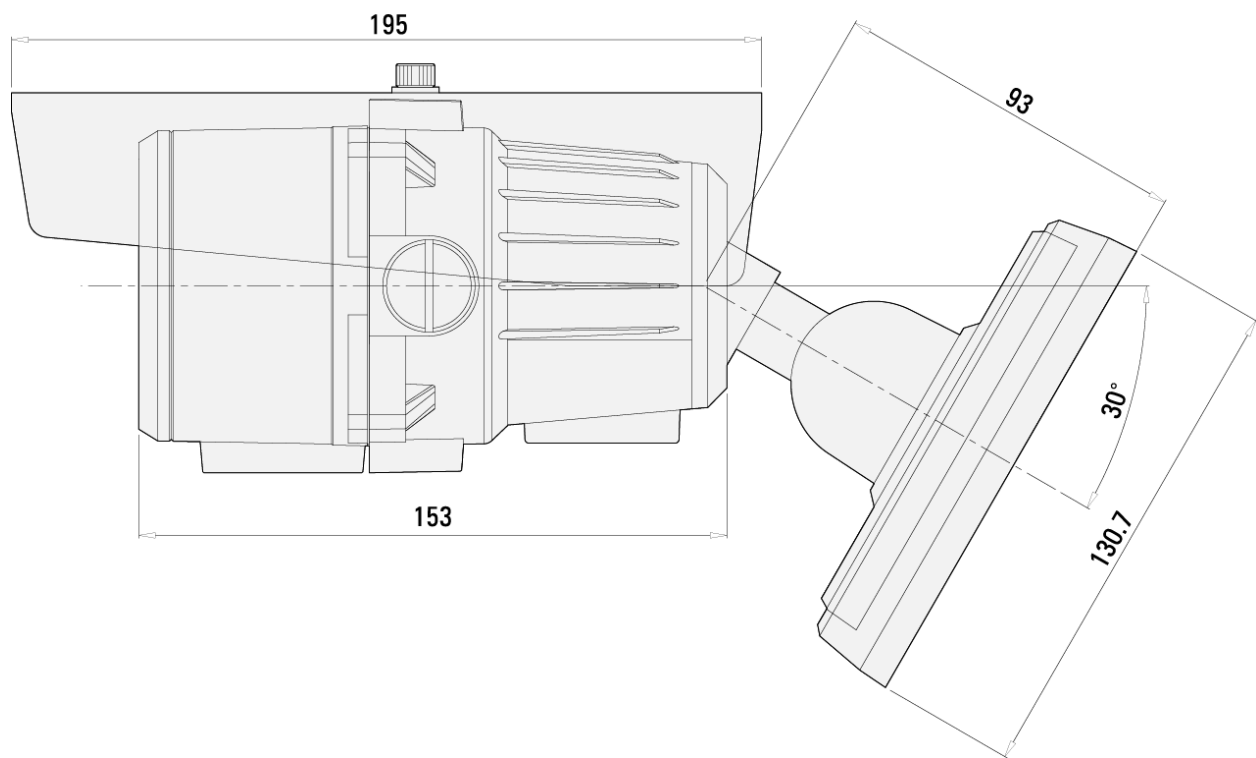
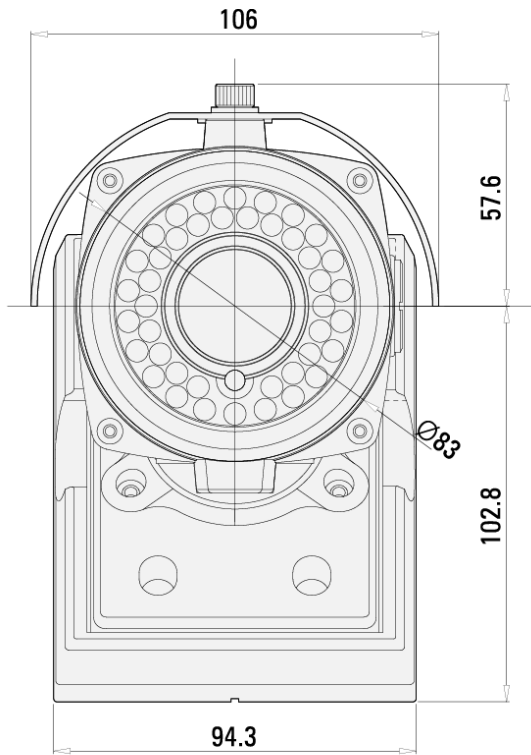
If you have trouble operating your camera, refer to the following table.

If the guidelines do not enable you to solve the problem, contact an authorized technician.

Problem	Solutions
Nothing appears on the screen.	<ul style="list-style-type: none">• Check that the power cord and line connection between the camera and monitor are fixed properly.• Check that you have properly connected VIDEO cable to the camera VIDEO output jack.
The image on the screen is dim.	<ul style="list-style-type: none">• Is lens stained with dirt? Clean your lens with soft, clean cloth.• Set the monitor to the proper condition.• If the camera is exposed to strong light, change the camera position.• Adjust the lens' focus properly.
The image on the screen is dark.	<ul style="list-style-type: none">• Adjust the contrast feature of the monitor.• If you have an intermediate device, set the 75Ω/ Hi-z properly. (Refer to section 7.1)• Adjust DC Level, VR Level properly. (Refer to section 6)
The camera is not working properly, and the surface of the camera is hot.	<ul style="list-style-type: none">• Check that you have properly connected the camera to an appropriate power source. (Refer to section 5)
The image on the screen flickers.	<ul style="list-style-type: none">• Is the camera facing direct sunlight or fluorescent lighting? Change the camera position.• Turn Flickerless (FL) On

10. Dimensions

(mm)



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11. Contact

To contact Videology Imaging Solutions:

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<http://www.videologyinc.com/>

Please note that data in this application note is subject to change without notification!

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