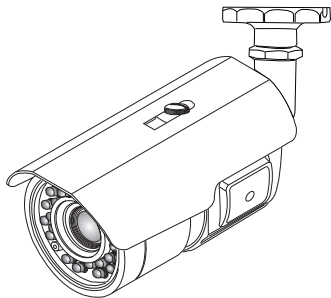


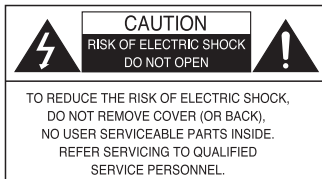
700TVL WDR•3D DNR CAMERA

700TVL SUPER WDR/3D DNR IR BULLET CAMERA USER'S MANUAL



- 1/3" 960H IT CCD
- High Resolution 700TV Lines
- WDR(Wide Dynamic Range)
- 3D DNR(Digital Noise Reduction)
- Sens-Up Function(x512)
- Eclipse Function
- Zero Defect
- Day & Night (ICR-Optional)
- Motion Detection
- Back Light Compensation
- RS485 / PELCO-D
- Privacy Mask(Polygonal,8 Colors)
- O.S.D menu function

960H/SP 002



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 fire hazards:

- Do NOT use power sources 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.

Precaution

	Do not Keep the camera face to strong light directly
	Do not install the camera in extreme temperature conditions.
	Do not disassemble the camera even if troubles happened
	To avoid malfunctions, never use the camera close to a gas or oil leak
	Do not drop the camera or subject them to physical shocks.
	Do not expose the camera to rain or spill beverage on it.
	Do not install the camera under unstable lighting conditions
	Do not install or use the camera in an environment where the humidity is high

1. Features

WDR(Wide Dynamic Range)

Delivers a powerful Wide Dynamic Range to the camera which provides superior images, internally and externally, even under extreme light and dark contracts. It automatically compensates the necessary light levels to get detailed information in the dark part of the image without saturation from the bright part. It enables the WDR function to be very efficient, using a normal CCD, by using a Dual Shutter (long & short shutter) algorithm, a specialised AE (Auto Exposure) and intelligent image processing.

700 TVL ULTRA HIGH RESOLUTION

The horizontal resolution of 700 TV Lines with 1/3"960H IT CCD. It gives a vivid image output with super high horizontal resolution using our own De-Mosaic Interpolation algorithm and a specialised built-in sharpness filter.

3D DNR(Digital Noise Reduction)

Achieves excellent 3D-DNR (3-Dimensional Digital Noise Reduction) function using upgraded 3D filtering. This function is automatically enabled when the camera is being used and provides clear and superior images in very low light luminance. Normally video noise increases in low light conditions, while the gain level of the amplifier increases. It compensates for the dynamic noise using the inactive information of a normal frame

ZERO DEFECT

Adaptive Defect Correction delivers clear picture capture in very low light luminance using two algorithms for defect pixel compensation.

Sens-Up(x512, DSS)

Achieves high quality pictures by supporting a long exposure time - more than 1/50second - and enables recognition of the shape and color of a suspended object under no light conditions - in cases where exposure time is greater than 8 seconds (x512).

POLYGONAL PRIVACY MASKING(Polygonal, 8colors)

Ensures privacy protection for private and specific areas on the video signal output using a polygonal masking function. It allows the size and position of the masking areas to be controlled very easily, and there are 8 mask areas which are user programmable - color, brightness and mosaic.

ECLIPSE

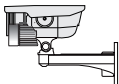
Enables the recognition of a visible car license plate by blocking unwanted light sources.

HIGH SENSITIVITY TRUE DAY&NIGHT

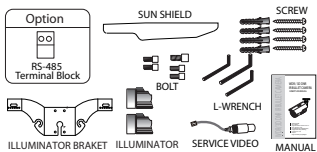
The Day & Night function delivers high quality color rendition and converts automatically into monochrome as luminance levels drop.

2. Components

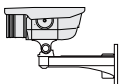
A Type
80units
(40 IR LEDs + 40 SRLEDs)



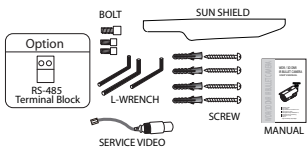
VB-70IRC80L650D



B Type
40 IR LEDs(w/o SR LED)



VB-70IRC40L650D



C Type
68 IR LEDs



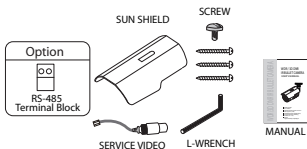
VB-70IRC40L3516D

D Type-40 IR LEDs

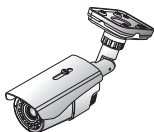
E Type-28 IR LEDs



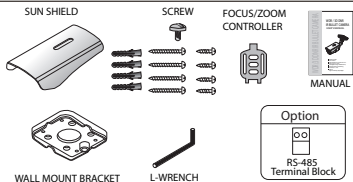
VB-70IRC28L3516D



F Type-40 IR LEDs

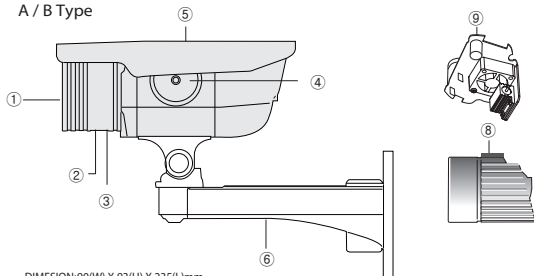


VB-70IRC40I3516D



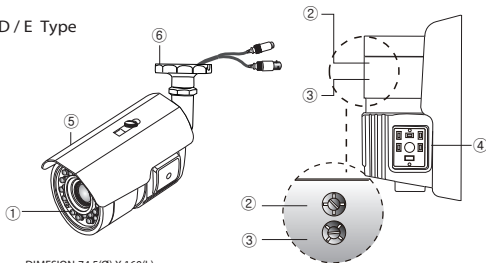
3. Names and Functions of Parts

A / B Type



DIMENSION:90(W) X 93(H) X 235(L)mm

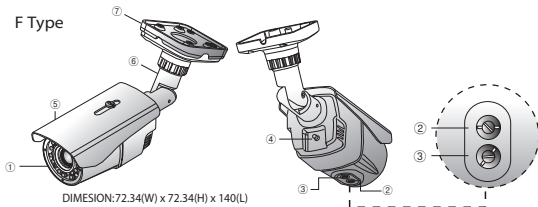
C/D/E Type



DIMENSION:74.5(Ø) X 160(L)mm

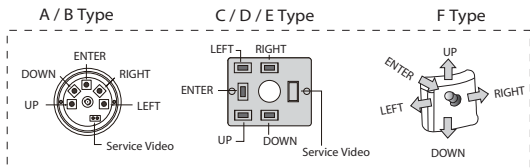
DIMENSION:94(Ø) X 156(L)mm

F Type



DIMENSION:72.34(W) x 72.34(H) x 140(L)

- ① IR LEDs
- ② Focus Handle
Used to provide for accurate of an object within the lens field of view
- ③ Zoom Handle
Used to adjust zoom magnification by turning
- ④ OSD Menu

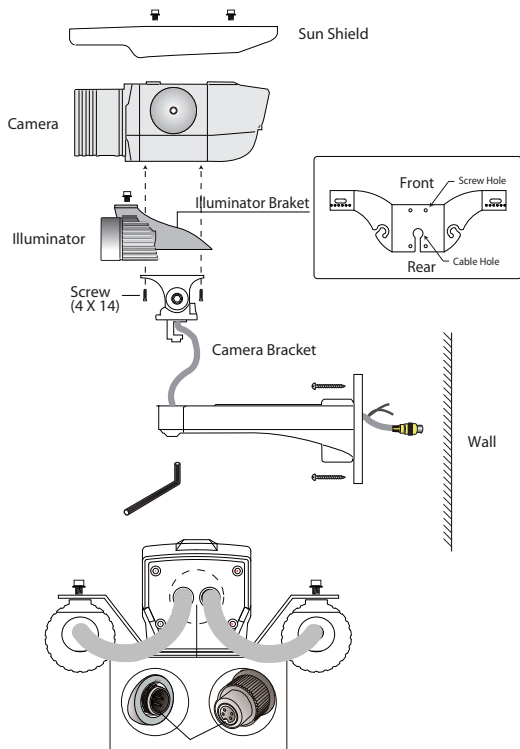


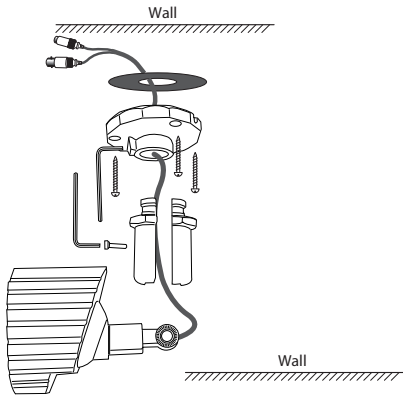
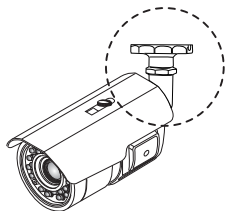
- ⑤ Sun-Shield
- ⑥ Bracket
- ⑦ Wall Mount Bracket(Optional)
- ⑧ Illuminator(Optional)
- ⑨ Heater & Blower(Optional-C/D/E Type)



Power Supply	Only AC 24V
Power Consumption	430mA (Heater) / 40mA(Blower)
Heater	On : 5 °C Off : 7 °C
Blower	Continuous 24 Hour Operation

4. Installation & Connection



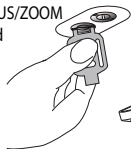


FOCUS/ZOOM
Adjusting

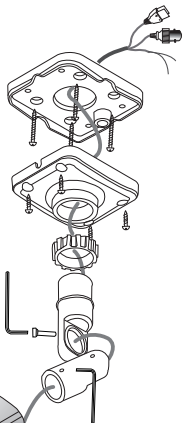
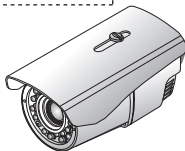
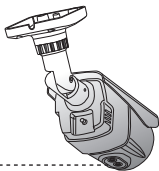


Please use enclosed controller to adjust the FOCUS / ZOOM.
And fix the back side of controller after adjusted.
It is for the enhancement of fixed and waterproof of lens focus.

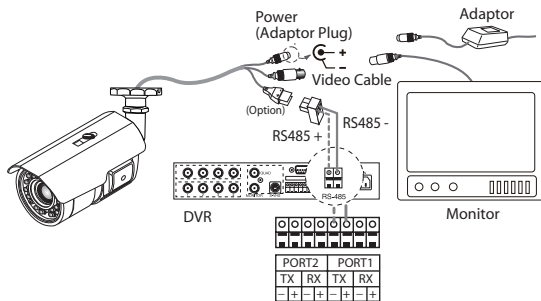
FOCUS/ZOOM
Fixed



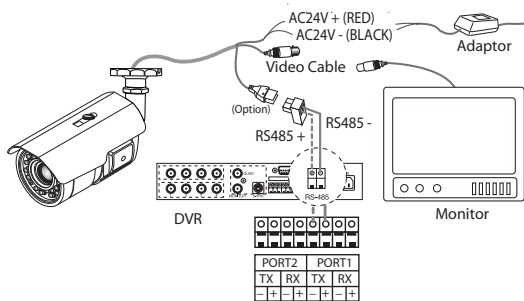
※ CAUTION
It is composed with very sensitive gear. The lens may become damaged, so please do not turn too much.



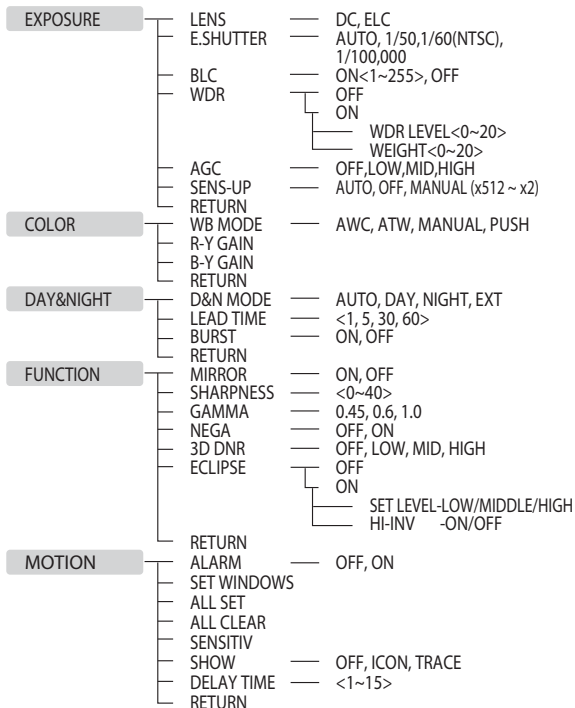
DC Power Connecting

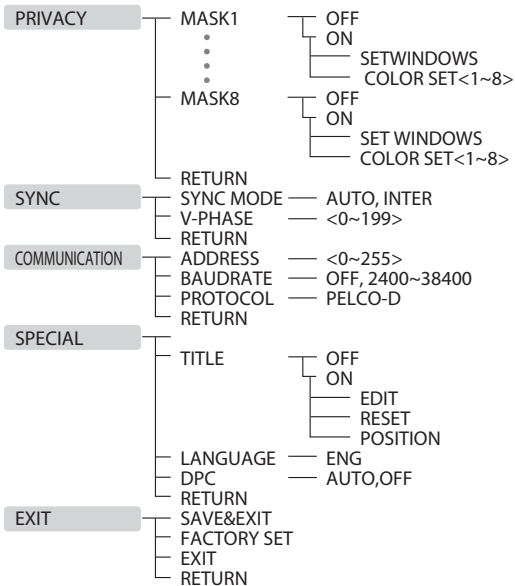


AC Power Connecting



5. Setup Menu Flow

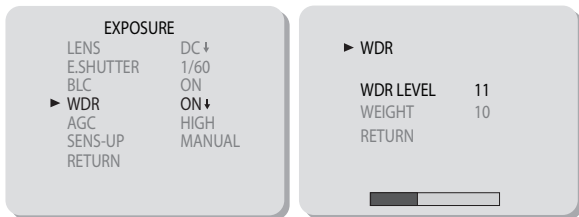




6. Special Features

1. WDR(Wide Dynamic Range)




Wide Dynamic Range is essential for capturing the images at all light levels.



1) WDR LEVEL :

You can set the WDR(Entry) LEVEL on the entry timing for this function. You have to set the level into low number if you need a WDR function just in more strong light.

On the contrary you have to set the level into high number if you need a WDR function just in normal conditions(or low light) without strong lights as like sunshine.

	0	2	4	6	8	10	12	14	16	18	20	
WDR Entry Level (Day Time) (0~20)												
	Strong Sunshine Light (Day Time)				Middle Light (Day Time)				Low Light (Day Time)			
	※ Eclipse mode should be Off while you use WDR function. (Eclipse is just a special WDR function for car license plate)											

2) WEIGHT : This is a level to make the dark area more bright.

Low number for more dark condition and high number for more brightness condition.

2. 3D DNR(Digital Noise Reduction)

Select 3D DNR ON or OFF.

3D-DNR function reduce the background noise in a low luminance environment. Upgraded 3D filtering ensures even more clear image.

[DNR Level High : Picture image is more clear but Ghost is more increased.

DNR Level Low : Picture image is not clear but less Ghost.]

MAIN MENU

EXPOSURE
COLOR
DAY & NIGHT
▶ FUNCTION
MOTION
PRIVACY MASK
SYNC
COMMUNICATION
SPECIAL
EXIT

FUNCTION

MIRROR ON/OFF
SHARPNESS <0~40>
GAMMA 0.45
NEGA ON/OFF
▶ 3D DNR MIDDLE
ECLIPSE OFF
RETURN

3. ECLIPSE

If there is a highlight within a limited environment such as car park, It makes it possible to review vehicle license plates by removing the highlight.

[Only used for car license plate in low light condition and the WDR in OSD menu should be Off mode while Eclipse work as On mode]

MAIN MENU

EXPOSURE
COLOR
DAY & NIGHT
▶ FUNCTION
MOTION
PRIVACY MASK
SYNC
COMMUNICATION
SPECIAL
EXIT

FUNCTION

MIRROR ON/OFF
SHARPNESS <0~40>
GAMMA 0.45
NEGA ON/OFF
3D DNR MIDDLE
▶ ECLIPSE OFF
RETURN

7. SPECIFICATIONS

TV System	NTSC		PAL		
Sensor	1/3" 960H IT CCD				
Total Pixel	1020(H) X 508(V)		1020(H) X 596(V)		
Effective Pixel	976(H) X 494(V)		976(H) X 582(V)		
Synchronization	Internal	H/V 15.734/59.94Hz		H/V 15.625/50Hz	
	Line Lock	H/V 15.750/60Hz		H/V 15.625/50Hz	
Scanning System	2:1 Interlace				
Horizontal Resolution	700 TV Lines (Max.)				
Min. Illumination	Sens-Up Off	0.12Lux(15IRE), 0.2Lux(30IRE), 0.4Lux(50IRE) F1.2			
	Sens-Up On	0.0002Lux(15IRE), 0.0005Lux(30IRE), 0.0008Lux(50IRE) F1.2			
Video Output	1.0Vp-p/ 75ohm Video 0.714Vp-p				
γ Correction	0.45, 0.6, 1.0				
S/N	More than 52dB(AGC off)				
O.S.D	LENS,E-SHUTTER, BACKLIGHT,WDR, AGC, SENS-UP				
	WHITE-BALANCE, DAY&NIGHT, MOTION, MIRROR				
	SHARPNESS, GAMMA, DNR, ECLIPSE, PRIVACY				
	COMMUNICATION, SYNC, TITLE, LANGUAGE				
	DPC				
Electrical Shutter	1/60~1/100,000		1/50~1/100,000		
Privacy Masking	8 Windows(Polygonal, 8 Colors)				
Day & Night	COLOR / BW / AUTO / EXT				
Motion Detection	ON / OFF				
Sens-Up(Low Shutter)	OFF ~x512				
SYNC	AUTO / INTERNAL / DIGITAL LINE LOCK				
White Balance	ATW / AWC / MANUAL / PUSH				
WDR	ON / OFF(WDR LEVEL, WEIGHT)				
WDR Level	120dB Max.				
3D-DNR	ON / OFF(OFF, LOW, MID, HIGH)				
MIRROR	ON / OFF				
NEGA	ON / OFF				
ECLIPSE	ON / OFF				
AGC	LOW / MIDDLE / HIGH / OFF				
	A Type 	B Type 	C Type 	D / F Type 	E Type 
IR LEDs	80(IR LED40 + SRLED 40) units	40 units	68 units	40 units	28 units
Night View Distance(Outdoor)	120m	40 m	40 m	30 m	25 m
LENS	6~50mm DC Auto Iris Lens		Aspherical 2.8~12mm DC Auto Iris Lens		
LENS(Optional)	Aspherical 2.8~12mm DC Auto Iris Lens		Aspherical 3.5~16mm DC Auto Iris Lens		
Operating Temperature/Humidity	-20℃ ~60℃ /30% ~80%				
Storage Temperature/Humidity	-30℃ ~60℃ /20% ~90%				
Supply Voltage	A Type		C Type		B / D / E Type
	DC12V	AC24V / DC12	DC12V	AC24V / DC12	DC12V
Current	DC12V AC24V / DC12V		1,250mA	580mA / 1,300mA	850mA
			400mA / 900mA	550mA	280mA / 600mA

Design and specifications are subject to change without notice.

PRODUCT WARRANTY CARD

1) ITEM # :
2) S/N # :
3) INSTALLATION CONDITION - Indoor <input type="checkbox"/> / Outdoor <input type="checkbox"/> - Power supply SPECIFICATION : DC12V <input type="checkbox"/> / AC24V <input type="checkbox"/> CURRENT _____ mA
4) TROUBLESHOOTING - No picture <input type="checkbox"/> - Bad image <input type="checkbox"/> - No power <input type="checkbox"/> - Water damage <input type="checkbox"/> - LED ON <input type="checkbox"/> / OFF <input type="checkbox"/> - ETC. : <input type="checkbox"/>
* Please keep this warranty card with the manual. * Please fill out this warranty card and send us this warranty card with the faulty units together.

- Following cases can be charged even within the warranty period.
- When defects are caused by user's carelessness.
 - When improper or unauthorized repairs are done or when the inside is modified or damaged.
 - Defects caused by natural disaster or power problem.
 - When the warranty card is not filled out or corrected unconfirmed.