

High Resolution Indoor/Outdoor IR Color CCTV Bullet Camera User Manual

Products: BC600 Series, BC601 Series, BC700 Series Cameras



Please read this manual before using your camera, and always follow the instructions for safety and proper use. Save this manual for future reference.



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



To prevent electric shock and risk of fire hazards, do NOT use other than the specified power source.

REGULATORY NOTICE

These cameras comply with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the 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 in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and use in accordance with the instructions, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause interference, in which case the user will be required to correct the interference at his own expense.

These cameras are CE and RoHS compliant.

LEGAL NOTICE

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The recording, transmission, or broadcast of any person's voice without their consent or a court order is strictly prohibited by law.

Observint makes no representations concerning the legality of certain product applications such as the making, transmission, or recording of video and/or audio signals of others without their knowledge and/or consent. We encourage you to check and comply with all applicable local, state, and federal laws and regulations before engaging in any form of surveillance or any transmission of radio frequencies.

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Precautions

- This camera should be installed by qualified personnel only.
- There are no user serviceable parts inside.
- Do not disassemble this camera other than to make initial adjustments.
- Use a UL approved regulated 12 volt DC power supply.
- Use appropriate low voltage power cable to prevent fire or electrical shock.
- Please insure that your installation area can support the weight of the camera.

Handle this camera carefully

- **Do not use a strong or abrasive detergent when cleaning the camera.**
- **Do not install near cooling or heating devices.**
- **Do not install the camera in extreme temperature conditions.** Use the camera in environments where temperature is within 14°F to 122°F. Use adequate ventilation if a camera is installed where high temperatures may occur.
- **Do not install or use the camera in an environment where the humidity is high.** Very high humidity levels can reduce image quality.
- **Do not install the camera under unstable lighting conditions.** Severe lighting change or flicker can cause the camera to work improperly.
- **Do not touch the front lens of the camera.** Finger prints, dust and soil on the front glass can cloud the video image and reduce the effectiveness of the IR array.
- **Do not drop the camera or subject it to physical shocks.**
- **Do not expose the camera to rain or spill liquids on it.** If it gets wet, wipe dry immediately. Liquids can contain minerals that corrode the electronic components.
- **Do not expose the camera to radioactivity.** If exposed to radioactivity the video sensor may fail.
- **Do not disassemble the camera.** There are no user-serviceable parts inside it.
- **Do not drop the camera or subject them to physical shocks.** It can cause malfunctions to occur.
- **Never point the camera at a strong light, or exposing it to a spotlight or an object reflecting the strong light.** Smear or blooming may occur, and it can damage the CCD.
- **Before applying power to the camera, check the power source to ensure that it is within specifications.**

SECTION 1 Introduction

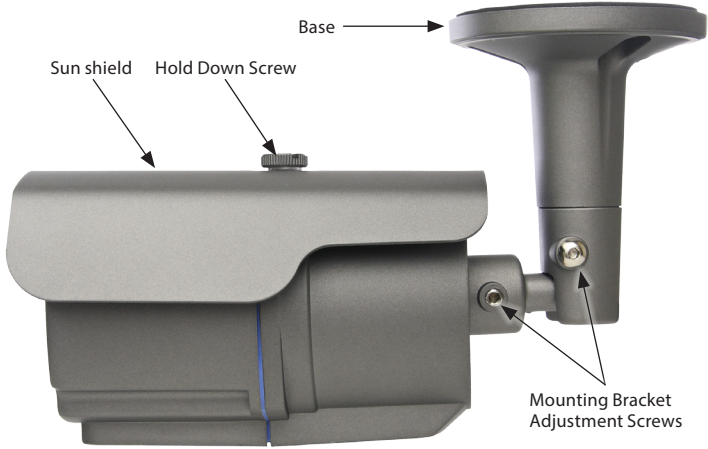
Features

- High resolution color sensor: 600 TV Lines (BC600, BC601 series), 700 TV Lines (BC700 series)
- OSD control functions (BC700 series)
- 12 Vdc power



BC700VFE Camera

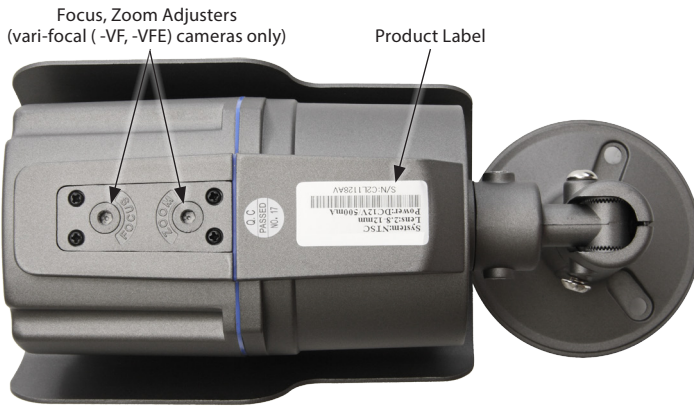
SECTION 1: INTRODUCTION



BC600, BC601, BC700 Series Cameras Side View



BC700VF Camera Top View



BC700VFE Camera Bottom

1.1 What's in the box

Your camera includes the following:

- Camera assembly
- Hex wrench
- Mounting hardware
- This manual

1.2 Tools you need

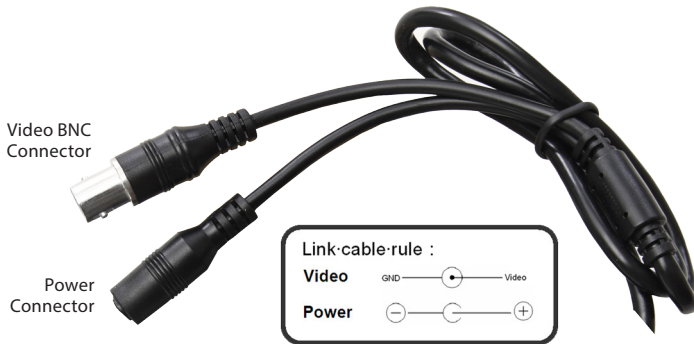
To install the camera, you will need:

- 12 Vdc power source. See Specifications for current requirement.
- Tools and additional fasteners (may be required) for mounting the camera
- Video and power extension cable
- CCTV video setup monitor (optional)

SECTION 2 Installation

2.1 General Guidelines

- **Camera Lens:** Handle the camera carefully to prevent scratching or soiling the lens. If the lens or IR array shield becomes soiled, clean it only with approved products. See the **Cleaning** section later in this manual.
- **Monitor impedance:** Set the monitor impedance switch to 75 Ω .
- **Power supply:** To avoid fire or shock hazard, use only UL listed power supplies.
- **Camera drop cable:** The camera drop cable includes two connectors:
 - **Video BNC connector** – for transmission of the video signal across a coax (75 Ω) extension cable.
 - **Power connector** – Use 12 Vac power source (see the Specifications section for power requirements). When applying 12 Vdc power, observe the power polarity. See the picture below for the connector polarity configuration.



Camera Drop Cable

2.2 Mounting the camera

The camera can be mounted on any surface with sufficient strength to support it. The video/power drop cable from the camera can be routed either through the cable hole in the center of the base plate, or through a cable guide in the mounting bracket.

1. Using the camera base as a guide, mark the location of the screws that anchor the base plate to the mounting surface. If you are routing the drop cable through base, also mark the position of the hole for the drop cable.

NOTE

Position the base plate so that the cable guide in the mounting bracket is pointing away from any source of water, dust, and other contaminants.

2. Drill holes for the screws that anchor the base to the mounting surface. The mounting hardware provided is appropriate for most surfaces. However, depending on the surface materials, more appropriate fasteners may be required.
3. Drill a 3/4" hole for the drop cable, if necessary.
4. Route the drop cable through the hole through the base plate, or through the cable guide in the mounting bracket, then attach the camera assembly to the surface using the appropriate fasteners.
5. Connect the camera drop cable to video and power extension cables as required.

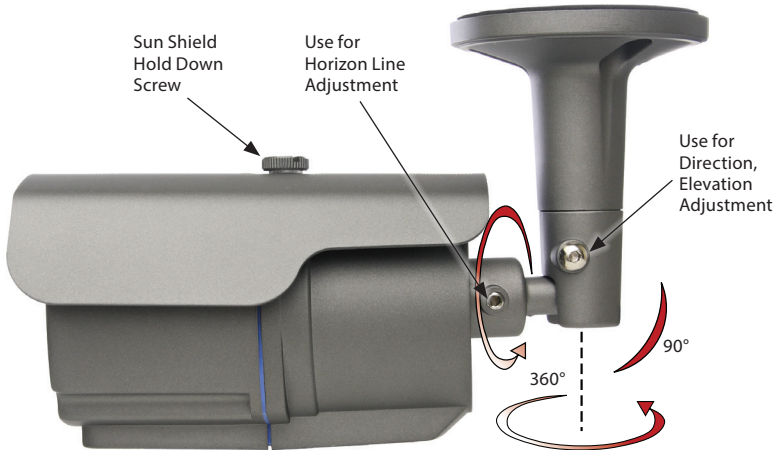
NOTE

Drop cable connectors are not waterproof.

2.3 Camera adjustments

1. Apply power to the camera.
2. If using a CCTV video system monitor to setup your camera, connect the video output of the camera to your CCTV monitor.
3. Verify that video from the camera can be seen on the monitor.
4. While observing video from the camera, use the hex wrench provided to loosen the two mounting bracket adjustment screws.
5. Point the camera at the center of your surveillance target, then tighten the bracket adjustment screws.

SECTION 2: INSTALLATION



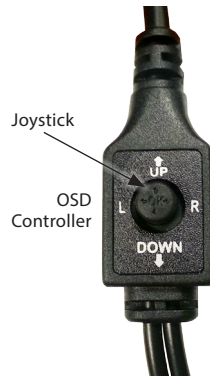
6. Adjust the sun shield (forward or back) to reduce glare, if necessary.
7. If your camera has a varifocal lens (-VF or -VFE models), use the hex wrench provided to adjust the video zoom and focus. The adjustment screws are located on the bottom of the camera.
8. If your camera is a BC700 series model, configure your camera using the software menus in the OSD. See **OSD Setup** in the following subsection.

2.4 OSD Setup (BC700 series cameras only)

BC700 series cameras include on-screen display (OSD) software for adjusting the internal camera settings to complement specific environment where it is installed. These settings are adjusted using the OSD controller attached to the camera drop cable.

The OSD controller includes a joystick that can be pushed down and rocked **UP**, **DOWN**, left (**L**) and right (**R**), or, to open the menu system and navigate the menus.

To use the OSD controller, press the joy stick in (toward the controller block) to open the OSD menu. (See the menu chart on the following page.) Rock the joystick **UP** or **DOWN** to highlight a parameter or submenu, then press the joystick in to select it. Rock the joystick right (**R**) to highlight an option, **UP** or **DOWN** to identify the option, then press the joystick in to select it. Repeat this method to navigate the menu system and select options.



OSD MENU OPTIONS

OSD SET	LENS	MANUAL		
		AUTO	TYPE: DC / VIDEO MODE: CLOSE / AUTO/OPEN SPEED: 0-255	
	SHUTTER/ AGC	AUTO	HIGH LUMINANCE MODE: SHUT+AUTO IRIS / AUTO IRIS	
			BRIGHTNESS: 0-255	
			LOW LUMINANCE MODE: OFF / AGC	
		MANUAL	BRIGHTNESS: $\times 0.25$, $\times 0.5$, $\times 0.75$, $\times 1$	
			MODE: SHUT+AGC	
			SHUTTER: 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 s AGC: 6, 12, 18, 24, 30, 36, 42, 44.8	
	WHITE BAL	ATW	SPEED / DELAY CNT / ATW FRAME / ENVIRONMENT	
		PUSH / ANTI CR / PUSH LOCK / USER1 / USER2 / MANUAL		
	BACK LIGHT	OFF / BLC / HLC		
	PICT ADJUST	MIRROR / BRIGHTNESS / CONTRAST / SHARPNESS / HUE / GAIN		
	ATR	OFF	--	
		ON	LUMINANCE/CONTRAST	
	MOTION DET	OFF	--	
		ON	DETECT SENSE / BLOCK DISP / MONITOR AREA / AREA SEL / TOP / BOTTOM / LEFT / RIGHT	
	PRIVACY	OFF	--	
		ON	AREA SEL / TOP / BOTTOM / LEFT / RIGHT / COLOR / TRANSP / MOSAIC	
	DAY/NIGHT	COLOR	--	
		B/W	BURST: OFF / ON	
		AUTO	BURST: OFF / ON	
	DELAY CNT / DAY-NIGHT / NIGHT-DAY			
	NR	NR	MODE: Y/C, OFF, Y, C	
	CAMERA ID	OFF/ON	--	
SYNC	INT	--		
LANGUAGE	ENGLISH / CHINESE / JAPANESE / ESPANOL / PORTUGUESE / PYCCKNN / FRANCAIS / DEUISCH			
CAMERA RESET / BACK / EXIT / SAVE ALL				

SECTION 3

Cleaning

Clean the camera dome with an approved glass cleaning solution and a lint free cloth.

- Dust can be removed from the unit by wiping it with a soft damp cloth. To remove stains, gently rub the surface with a soft cloth moistened with a mild detergent solution, then rinse and dry it with a soft cloth.
- Remove all foreign particles, such as plastic or rubber materials, attached to the camera housing. These may cause damage to the surface over time.



Do not use benzene, thinner or other chemical products on the camera assembly; these may dissolve the paint and promote damage of the surfaces. Before using any chemical product, read the accompanying instructions carefully.

SECTION 4

Specifications

Table 1. Specifications for BC600 series, BC601 series cameras

Model	BC600	BC601	BC601VF	BC601VFE
Sensor	1/3" CMOS	1/3" SHARP	1/3" SHARP	1/3" SHARP
Effective Picture Elements (H x V)	728 (H) x 488 (V)	768 (H) x 494 (V)	768 (H) x 494 (V)	768 (H) x 494 (V)
Horizontal Resolution	600 TV Line	600 TV Line	600 TV Line	600 TV Line
Minimum Illumination	0.1 lux / F1.2	0.01 lux / F1.2	0.01 lux F1.2 / 0 lux (with IR LED ON)	0.01 lux F1.2 / 0 lux (with IR LED on)
S/N Ratio	More than 46 dB	More than 48 dB	More than 48 dB	More than 48 dB
Scanning System	2:1 interface	2:1 interface	2:1 interface	2:1 interface
Synchronous System	Internal, negative sync.	Internal, negative sync.	Internal, negative sync.	Internal, negative sync.
Auto Electronic Shutter	1/60 s ~ 1/100,000 s	1/60 s ~ 1/100,000 s	1/60 s ~ 1/100,000 s	1/60 s ~ 1/100,000 s
Gamma Characteristic	0.45	0.45	0.45	0.45
IR Distance	65 ft (with Ø5 x 24 PCS Infrared LEDs)	65 ft (with Ø5 x 24 PCS Infrared LEDs)	131 ft (with Ø5 x 42 PCS Infrared LEDs)	196 ft (with Ø5 x 72 PCS Infrared LEDs)
IR Status	Under 10 lux by CDS	Under 10 lux by CDS	Under 10 lux by CDS	Under 10 lux by CDS
IR Power On	CDS AUTO control	CDS AUTO control	CDS AUTO control	CDS AUTO control
Video Output	1 Vp-p, 75 Ω	1 Vp-p, 75 Ω	1 Vp-p, 75 Ω	1 Vp-p, 75 Ω
Auto Gain Control	Auto	Auto	Auto	Auto
Power/Current	12 Vdc (+/-10%) / 350 mA	12 Vdc (+/-10%) / 350 mA	12 Vdc (+/-10%) / 500 mA	12 Vdc (+/-10%) / 800 mA
Lens	3.6 mm / F2.0	3.6 mm / F2.0	2.8 - 12 mm manual zoom	2.8 - 12 mm manual zoom
Dimensions (w x h x d)	6.89 x 2.72 x 2.17 in (175 x 69 x 55 mm)	6.89 x 2.72 x 2.17 in (175 x 69 x 55 mm)	8.66 x 3.15 x 3.15 in (220 x 80 x 80 mm)	10.24 x 3.86 x 3.74 in (260 x 98 x 95 mm)
Weight	29.3 oz (830 g)	29.3 oz (830 g)	38.8 oz (1100 g)	49.4 oz (1400 g)
Storage Temperature	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max
Operating Temperature	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % MAX	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % max	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % max	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % max

SECTION 4: SPECIFICATIONS

Table 2. Specifications for BC700 series cameras

Model	BC700	BC700VF	BC700VFE
Sensor	1/3" Sony Super-HAD CCD II	1/3" Sony Super-HAD CCD II	1/3" Sony Super-HAD CCD II
Effective Picture Elements (H×V)	976 (H) x 494 (V)	976 (H) x 494 (V)	976 (H) x 494 (V)
Horizontal Resolution	700 TV Line	700 TV Line	700 TV Line
Minimum Illumination	0.001 lux F1.2	0.001 lux F1.2	0.001 lux F1.2 / 0 lux (with IR LED on)
S/N Ratio	More than 52 dB	More than 52 dB	More than 52 dB
Scanning System	2:1 interface	2:1 interface	2:1 interface
Synchronous System	Internal, negative sync.	Internal, negative sync.	Internal, negative sync.
Auto Electronic Shutter	1/60 s ~ 1/100,000 s	1/60 s ~ 1/100,000 s	1/60 s ~ 1/100,000 s
Gamma Characteristic	0.45	0.45	0.45
IR Distance	65 ft (with Ø5 x 24 PCS Infrared LEDs)	131 ft (with Ø5 x 42 PCS Infrared LEDs)	196 ft (with Ø5 x 72 PCS Infrared LEDs)
IR Status	Under 10 lux by CDS	--	Under 10 lux by CDS
IR Power On	CDS AUTO control	--	CDS AUTO control
Video Output	1 Vp-p, 75 Ω	1 Vp-p, 75 Ω	1 Vp-p, 75 Ω
Auto Gain Control	Auto	Auto	Auto
Power/Current	12 Vdc (+/-10%) / 350 mA	12 Vdc (+/-10%) / 500 mA	12 Vdc (+/-10%) / 800 mA
Lens	3.6mm / F2.0	2.8 - 12 mm manual zoom	2.8 - 12 mm manual zoom
Dimensions (w x h x d)	6.89 x 2.72 x 2.17 in (175 x 69 x 55 mm)	8.66 x 3.15 x 3.15 in (220 x 80 x 80 mm)	10.24 x 3.86 x 3.74 in (260 x 98 x 95 mm)
Weight	29.3 oz (830 g)	38.8 oz (1100 g)	49.4 oz (1400 g)
Storage Temperature	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max	-22 ~ 140 °F (-30 ~ +60 °C) RH 95 % max
Operating Temperature	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % max	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % max	14 ~ 122 °F (-10 ~ +50 °C) RH 95 % max

APPENDIX A Troubleshooting

Problem	Possible Cause
Nothing appears on the screen	<ul style="list-style-type: none"> - Check the power connection. - Check the video signal cable connection to the monitor.
The video image is dim or not clear.	<ul style="list-style-type: none"> - If the camera lens is dirty, clean it with a soft, clean cloth. - Adjust the monitor controls, if necessary. - If the camera is facing a very strong light, change the camera position. - Adjust the lens focus.
The screen is dark.	<ul style="list-style-type: none"> - Adjust the contrast control of the monitor. - If you have an intermediate device, set the impedance (75 Ω /Hi-Z) properly, and check the cable connections.
The camera is not working properly and the surface of the camera is hot.	<ul style="list-style-type: none"> - Verify that the camera is correctly connected to an appropriate regulated power source.
The MOTION DETECTION function is not working	<ul style="list-style-type: none"> - Is "MOTION DETECTION" mode turned on? - Check the setting of the MD AREA.
The image on the monitor flickers	<ul style="list-style-type: none"> - Make sure that the camera isn't facing direct sunlight or fluorescent light. If necessary, change the camera position.
Colors are not quite right.	<ul style="list-style-type: none"> - Check the settings in the WHITE BAL menu.

