

# BELL+HOWELL

## BHNV20

Digital Monocular with 850nm Infrared  
Daytime & Nighttime Capture



**BHNV20 User's Manual**

## About this Manual

Congratulations on purchasing the Bell+Howell BHNV20 Digital Night Vision Monocular!

The contents of this manual are subject to change without notice. Note that the example screens and product illustrations shown in this User's Guide may differ somewhat from the screens and configuration of the actual monocular.

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## FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT

This equipment has been tested and found to comply with the limits for a Class B 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 used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

## CAUTION:

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies 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.

## RF Exposure Warning

This equipment complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This equipment must be installed and operated in accordance with provided instructions and must not be co-located or operating in

conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

FCC: SAR standard Value: 1.6 W/Kg, Maximal Measure: 0.4 W/kg

## **CE Mark Warning**

This is a Class B product, in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

## **Safety and Handling Precautions**

### **Monocular Information**

- Do not disassemble or attempt to service the monocular yourself.
- Do not expose the monocular to moisture, or extreme temperatures.
- Allow the monocular to warm up when moving from cold to warm temperatures.
- Do not touch and put pressure on the monocular lens.
- Do not expose the lens to direct sunlight for extended periods.
- Do not use abrasive chemicals, cleaning solvents or strong detergents to clean the product. Wipe the product with a slightly damp soft cloth.
- Do not use the flash or LED Light near a person's eyes to prevent possible eye injury.
- To prevent you from falling over or resulting in traffic accident, please do not use the monocular while you are walking, driving or riding a vehicle.
- Please handle the monocular strap with care, and never place the strap around the neck of an infant or child. Wrapping the strap around a neck may cause suffocation.
- Do not subject the LCD screen to impact.
- To prevent the risk of fire or electric shock, do not expose this appliance to rain or moisture.

### **Battery Information**

- Turn off the monocular before installing or removing the battery.
- Use only the provided batteries or type of battery and charger that came with your monocular. Using other types of battery or charger may damage the device and invalidate the warranty.
- Inserting the battery upside down can cause damage to the product and possibly cause an explosion.
- When the monocular is used for an extended period of time, it is normal for the monocular body to feel warm.
- Download all pictures and remove the battery from the monocular if you are going to store the monocular for a long period of time.
- The type of battery and the battery power level may cause the lens to be stuck up. Ensure you use the correct battery type and use a fully charged battery.

## 1. About Your Monocular

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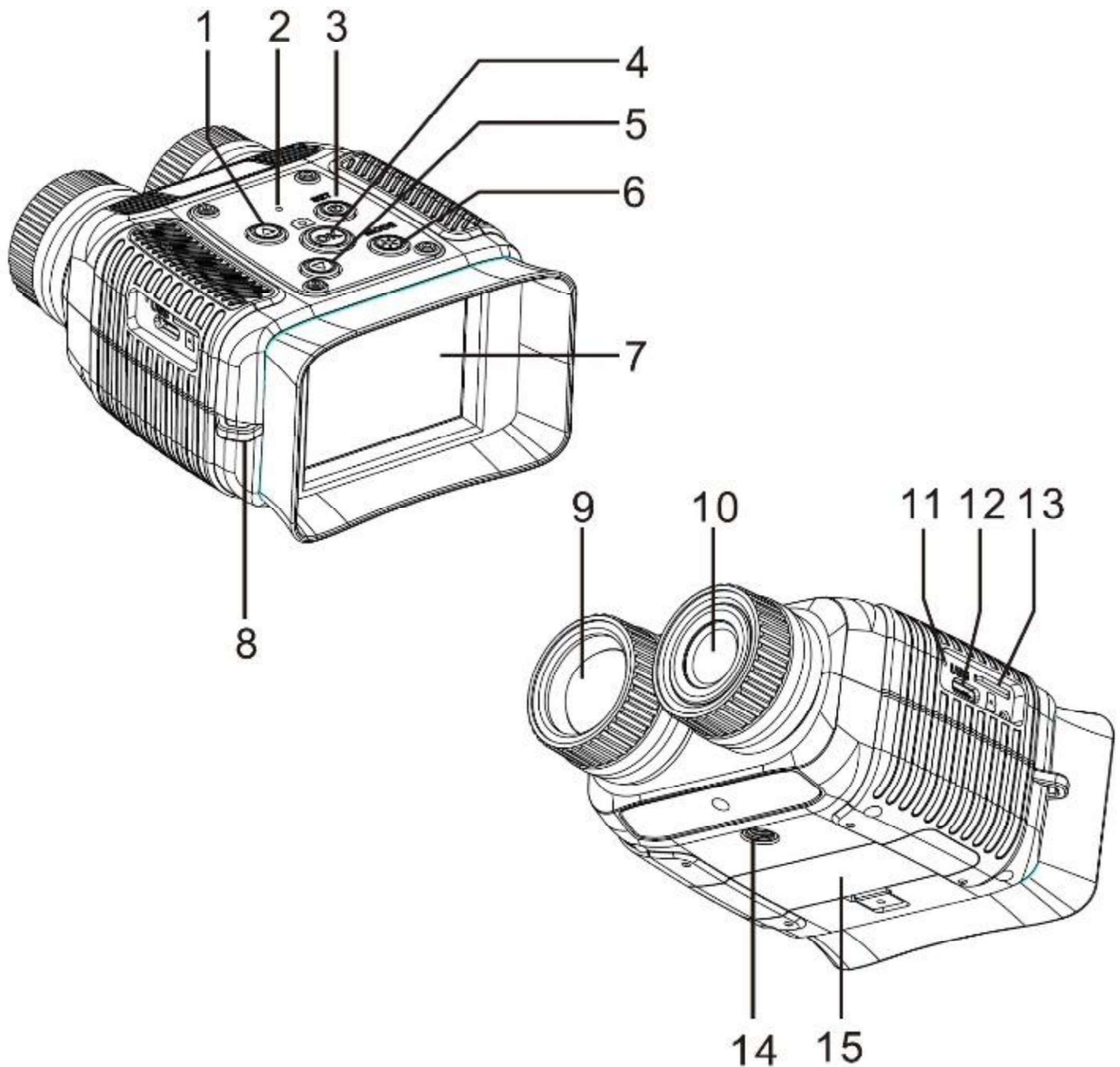
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.
- Please keep the batteries out of the reach of children to prevent from swallowing batteries, which might cause poisoning.
- Once the battery's color changes or its shape is twisted, please stop using it.

### **USB adapter Information**

- Do not expose the adapter to high temperatures or moisture places. Otherwise, it may cause fire or electric shock.
- Do not attempt to repair, disassemble, change or transform the adapter.
- Avoid sudden changes in temperature, which may cause condensation on the adapter's internal surfaces. Please do not use it immediately in this situation.
- Do not touch the plug with wet hands. Otherwise, it may cause electric shock.
- Do not use the travel voltage converter or AC/DC power inverter. Otherwise, it may cause damage, overheating, malfunction or fire to the monocular.

# 1. About Your Monocular

## 1.1 Monocular Interface



1. Up   Zoom In	9. IR LED
2. Status LED	10. Lens
3. Power   Menu	11. Charging LED
4. OK   Capture	12. USB Port
5. Down   Zoom Out	13. Memory Card Slot
6. Night Vision   Mode	14. Tripod Mount
7. LCD Display	15. Battery Door
8. Strap Mount	

# 1. About Your Monocular

## 1.2 Button Function Description

Function	Description
<b>Power   Menu</b>	Press and hold for 3 seconds to power on and press and hold for 3 seconds to power off. <b>In Video and Photo:</b> Press to access menus. <b>In Video Playback:</b> Press to access the delete submenu.
<b>Ok   Shutter   Record</b>	OK button in menus. Tap to confirm a setting. <b>In Photo:</b> Press to capture a photo. <b>In Video:</b> Tap to start recording, tap again to stop recording. <b>In Playback:</b> Tap to start playing a recorded video.
<b>Zoom In   Up</b>	<b>In Video and Photo:</b> Press to zoom-in. <b>In Menu:</b> Press to go to the previous settings option. <b>In Playback:</b> Press to go to the previous video or image.
<b>Zoom Out   Down</b>	<b>In Video and Photo:</b> Press to zoom-out. <b>In Menu:</b> Press to go to the next settings option. <b>In Playback:</b> Press to go to the next video or image.
<b>Night Vision   Mode</b>	Press and hold for 3 seconds to change modes. <b>In Video and Photo:</b> Press to activate the IR LEDs.
<b>IR LED Light</b>	LED light to aid with vision and recording in darkness.
<b>Tripod Mount</b>	Mount port for attaching to a tripod nut located on the bottom of the
<b>Focus Ring</b>	Rotate left or right to focus the image on the screen.

## 2. First Use

### 2. First Use

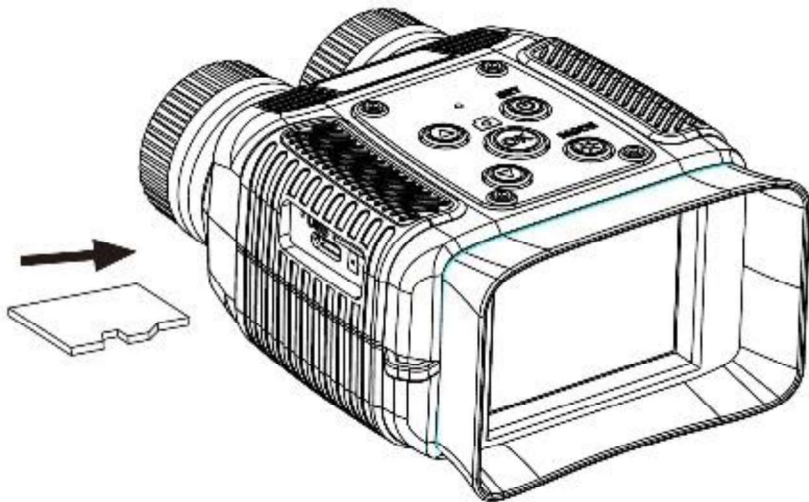
#### 2.1 Inserting the Memory Card

Insert the included MicroSD memory card to record and store your videos and photos. When the battery is low, media stored on the memory card will not be erased. Please insert the MicroSD memory card by following the steps below:

1. Open the rubber jack door to access the memory card slot.
2. Insert the memory card. Ensure that the metal contacts are inserted first. Push the memory card down until you hear an audible click.

**The memory card can only be inserted in one way. Do not force the card in if it will not go in smoothly.**

3. Close the rubber jack door.
4. To remove the memory card, simply push in and the card will eject out.



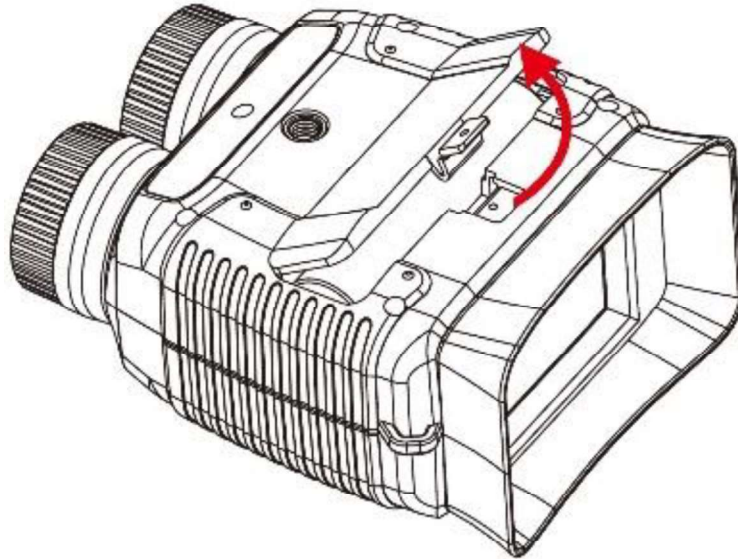
#### NOTE:

- Please format the memory card before using the monocular (Caution, this will erase all data on the card).
- Do not remove or insert the memory card when recording. It may damage the card or cause data loss.
- Memory card rating must be Class 10 or above.

#### 2.2 Installing the Battery

Insert the lithium-ion battery into the battery compartment while making sure to install it in the correct orientation.

1. Open the battery door by pushing the battery door tab and then lifting up the door.
2. Insert the battery. Ensure that the metal contacts are inserted in the correct orientation as shown on the monocular body.
3. Close the battery door, you will hear an audible click when the battery door is locked.



### 2.3 Charging the Battery

Connect your monocular to the included AC adaptor with the USB cable provided for charging. Open the rubber jack door on the side of the monocular to access the charging port. Insert the small end of the USB plug into the monocular's port, and the larger end into the included AC adaptor. The LED indicator light will light up red while charging and will light up green when charging is complete.

### 2.4 Powering the Monocular On/Off

Press and hold the POWER/MODE button for three seconds to power the monocular on. To power the monocular off, press and hold the POWER/MODE button for three seconds. If the monocular's battery is low, a "Low Power" message will display on the screen and it will automatically shut down within a few seconds to prevent memory corruption or loss.

### 2.5 Switching Modes

Press and hold the MODE button to cycle between Photo, Video and Playback modes.



### 2.6 Connecting to a Computer

Your monocular can connect to your computer and perform 2 functions:

- a) Transfer photo and video files for viewing and storage (**MASS STORAGE**)
- b) PC Webcam (**PC CAM**)

To connect the monocular to your computer, open the rubber jack door on the side of the monocular to access the USB port. Insert the smaller end of the included USB plug into the monocular's USB port, and the larger USB plug end into a free USB port on your computer.

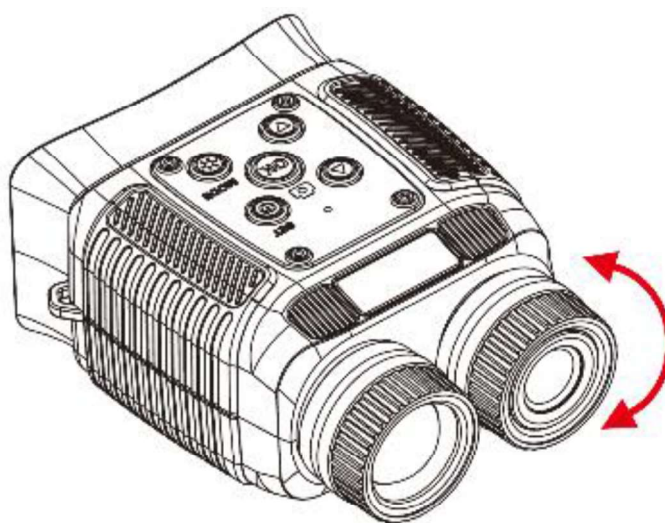
Once connected and powered on, the monocular's screen will present 2 options: "MASS STORAGE" and "PC CAM". Use the UP or DOWN buttons to select your desired mode and press the OK button to enter into that mode.

To transfer photos and videos:

Go to *Start* → *This PC* → and find *Removable Disk*. Your monocular acts like a card-reader when connected to your PC and media can easily be accessed this way. Your media will be stored in a folder on this removable disk/drive.

### 2.7 Focusing

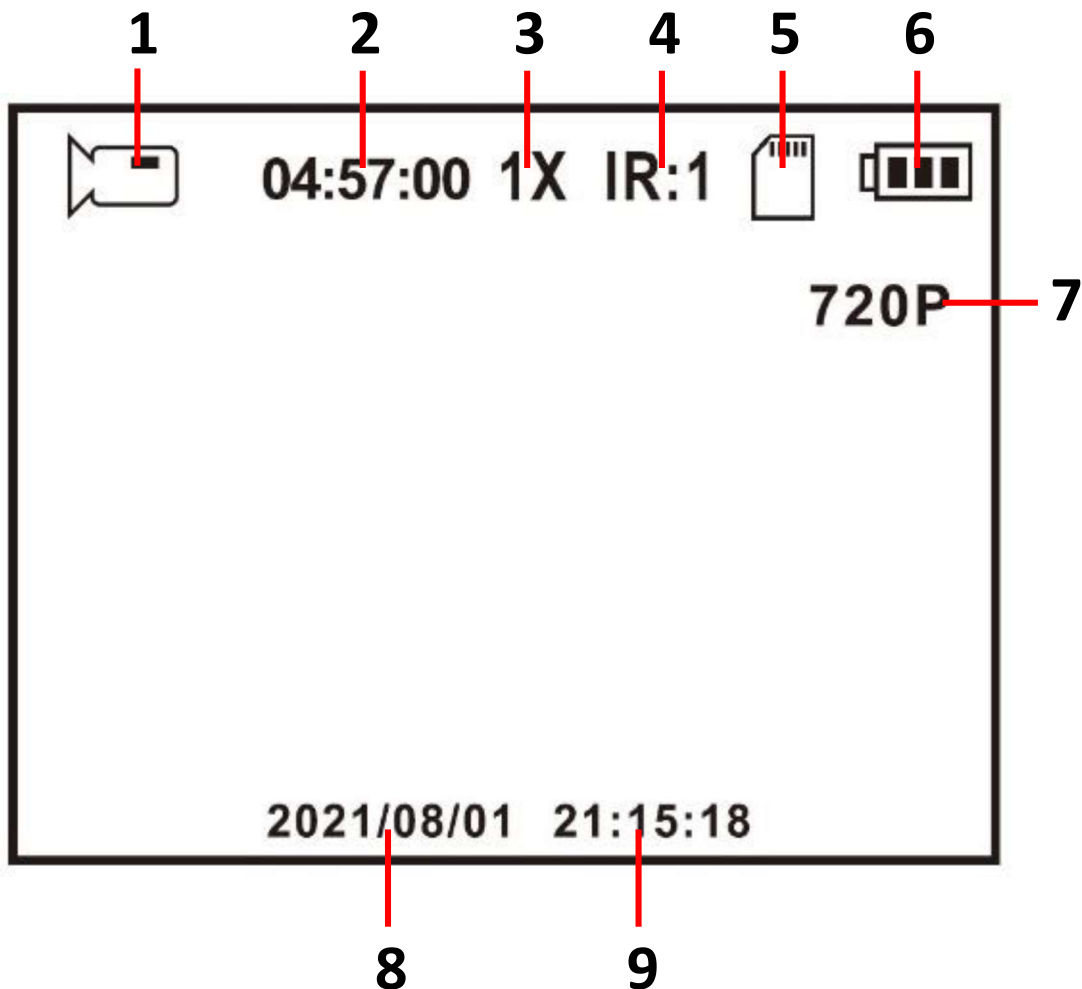
When viewing objects or scenes at varying distances, the image may be out of focus and appear blurry. To focus the monocular, hold the monocular to your eyes and while viewing the subject or scene, slowly rotate the focus ring left or right until the image is in focus.



### 2.8 Video Mode

Press the MODE button to switch to Video Mode. The meaning of each icon within Video Mode is explained in the table below:

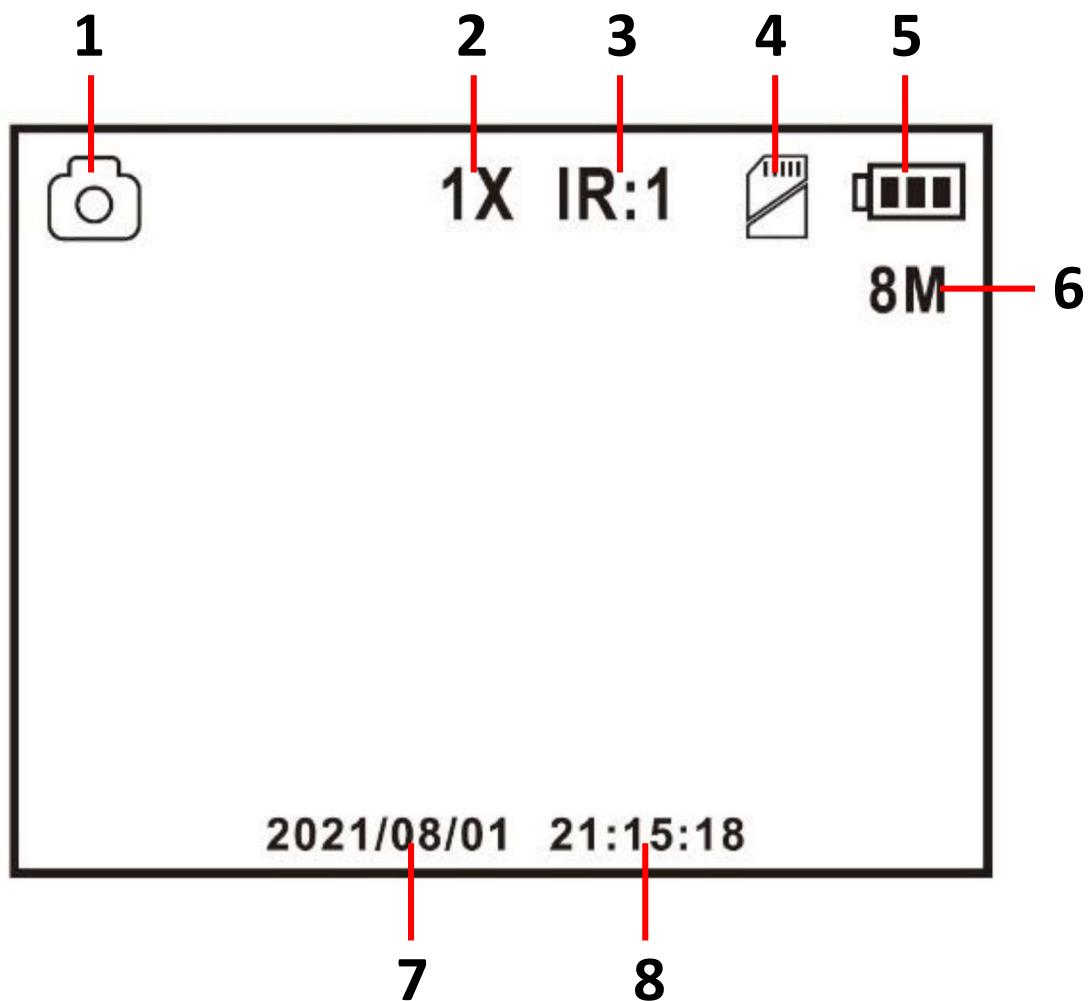
1. Video Mode	6. Battery Level
2. Recording Time Remaining	7. Video Size (Resolution)
3. Zoom Level	8. Current Date
4. IR Strength Level	9. Current Time
5. Memory Card Inserted	



### 2.9 Photo Mode

Press the MODE button to switch to Photo Mode. The meaning of each icon within Photo Mode is explained in the table below:

1. Photo Mode	5. Battery Level
2. Zoom Level	6. Photo Size (Resolution)
3. IR Strength Level	7. Current Date
4. Memory Card Not Inserted	8. Current Time



### 2.10 Using the Zoom Function

This monocular has a digital zoom function. To operate the zoom function, press UP/ZOOM IN button to zoom in closer to the subject, and press the DOWN/ZOOM OUT button to zoom away from the subject.

***NOTE: Zoom is not available while recording video.***

### 2.11 Using the IR Night Vision Mode

This monocular has built-in infrared (IR) LEDs for night vision recording - giving you the ability to capture photos and videos in a dark environment.

In Photo or Video mode, press the NIGHT VISION button once to enable the IR LED light. When the IR LED light is enabled, the IR LED light indicator at the top of the screen will be displayed. There are 7 strength levels available for the night vision, levels 1-7. Level 1 is the lowest and level 7 is the highest. The darker the environment, the higher the night vision level should be set to. To disable the IR light, press the NIGHT VISION button to cycle through all of the levels, once you reach level 7, press the NIGHT VISION button again and the IR light will turn off. You will notice that the IR light indicator on the screen is no longer showing.

**Note:**

The photos and videos taken while the IR LED is enabled will be recorded in black and white.

The IR LED can also be enabled or disabled during a recording.

### 3. Using the Monocular

#### 3.1 Photo Shooting

Power the monocular on and it will be ready to capture photos right away. A camera icon will appear in the top left corner of the screen. Press and hold the MODE button to switch to a different mode.

1. Line up your shot by looking at the LCD screen to see what is in the shot.
2. Hold the monocular steady and press the PHOTO button to capture a photo.
3. The number of photos that can be captured at a particular resolution will be displayed in the top right corner of the screen.
4. The number of remaining photos is determined by the selected photo resolution. The higher the photo resolution, the lower the number of photos you are able to be save to the memory card. Before capturing any photos, you can select a preferred photo resolution.

#### 3.2 Video Recording

A camcorder icon will appear in the top left corner of the screen when you are in Video mode. Press and hold the MODE button to switch to a different mode.

1. Line up your shot by looking at the LCD screen to see what is in view.
2. Hold the monocular steady and press the PHOTO button to begin recording.
3. When recording begins, a rolling timer will display in red in the top right corner of the screen. This indicates the recorded video time elapsed.
4. Press the PHOTO button again to stop recording.
5. The recorded video files will automatically save onto the inserted memory card.

### 3.3 Settings

Your monocular has a number of settings that can be changed to your preferences. The monocular settings can be found below.

#### 3.3.1 Video Resolution

Your monocular has a number of preset resolutions.

1. In Photo or Video Modes press the MENU button.
2. Select '*Video Resolution*' using the UP or DOWN buttons and press the OK button to enter the '*Video Resolution*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*1080FHD 1920X1080, 1080P 1440X1080, 720P 1280X720*).
4. Press the MENU button to exit the submenu.

#### 3.3.2 Loop Recording

This function allows you to set a maximum duration for each video clip recorded.

1. In Photo or Video Modes press the MENU button.
2. Select '*Loop Recording*' using the UP or DOWN buttons and press the OK button to enter the '*Loop Recording*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*Off, 1 Minute, 2 Minutes, 3 Minutes, 5 Minutes*).
4. Press the MENU button to exit the submenu.

***Once you select an option, your monocular will record video clips in this interval only. Once this duration is reached, the monocular will seamlessly end recording and begin recording a new video file.***

#### 3.3.3 Photo Resolution

Your monocular has a number of preset resolutions.

1. In Photo or Video Modes press the MENU button.
2. Select '*Photo Size*' using the UP or DOWN buttons and press the OK button to enter the '*Photo Size*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*12MP 4032x3024, 10MP 3648x2736, 8MP 3264x2448, 5MP 2592x1944, 3MP 2048x1536*). A higher resolution will produce a higher quality and larger image file.

## 3. Using the Monocular

4. Press the MENU button to exit the submenu.

### 3.3.4 Exposure

This function adjusts the frame brightness in your video.

1. In Photo or Video Modes press the MENU button.
2. Select '*Photo Size*' using the UP or DOWN buttons and press the OK button to enter the '*Photo Size*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (+5/3, +4/3, +1.0, +2/3, +1/3, 0.0, -1/3, -2/3, -1.0, -4/3, -5/3).
4. Press the MENU button to exit the submenu.

### 3.3.5 Date Stamp

This setting allows you to imprint a date & time onto your recorded video files. Once a video file is recorded with the imprint, the imprint cannot be removed.

1. In Photo or Video Modes press the MENU button.
2. Select '*Date Stamp*' using the UP or DOWN buttons and press the OK button to enter the '*Date Stamp*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*Off, On*).
4. Press the MENU button to exit the submenu.

### 3.3.6 Auto Power Off

This function sets the duration of time in which the monocular will wait with no user input before automatically powering off.

1. In Photo or Video Modes press the MENU button.
2. Select '*Auto Power Off*' using the UP or DOWN buttons and press the OK button to enter the '*Auto Power Off*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*Off, 1 Minute, 3 Minutes*).
4. Press the MENU button to exit the submenu.

### 3.3.7 Screen Saver

This function sets the duration of time in which the monocular will wait with no user input before automatically turning off the LCD screen. Note: even while the screen is off, the monocular will still be powered on.

1. In Photo or Video Modes press the MENU button.
2. Select '*Screen Saver*' using the UP or DOWN buttons and press the OK button to enter the '*Screen Saver*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK

## 3. Using the Monocular

button to confirm your selected setting (*Off, 1 Minute, 2 Minutes*).

4. Press the MENU button to exit the submenu.

### 3.3.8 Language

This function allows you to set the monocular's interface language.

1. In Photo or Video Modes press the MENU button.
2. Select '*Language*' using the UP or DOWN buttons and press the OK button to enter the '*Language*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected language.
4. Press the MENU button to exit the submenu.

### 3.3.9 Date/Time Set

This function allows you to set the current Date and Time on your recorded videos and captured photos.

1. In Photo or Video Modes press the MENU button.
2. Select '*Date/Time*' using the UP or DOWN buttons and press the OK button to enter the '*Date/Time*' submenu.
3. Press the UP or DOWN buttons to change the highlighted value.
4. Press the OK button to switch to the next value.
5. The set date and time will automatically save when exiting the submenu.
6. Press the MENU button to exit the submenu.

### 3.3.10 Format Memory Card

The format setting erases all photos, videos and data stored on your memory card.

1. In Photo or Video Modes press the MENU button.
2. Select '*Format Memory Card*' using the UP or DOWN buttons and press the OK button to enter the '*Format Memory Card*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*Cancel, OK*).
4. Press the MENU button to exit the submenu.

***NOTE: This will delete all of your media and cannot be undone.***

### 3.3.11 Restore Default Settings

Factory default settings can be restored in this menu. This function will not delete the media stored on the memory card, and will only restore all of the menu's setting back to factory default settings.



## 3. Using the Monocular

1. In Photo or Video Modes press the MENU button.
2. Select '*Restore Default Settings*' using the UP or DOWN buttons and press the OK button to enter the '*Restore Default Settings*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (*Cancel, OK*).
4. Press the MENU button to exit the submenu.

### 3.3.12 Version

This setting displays the current firmware version of your monocular.

1. In Photo or Video Modes press the MENU button.
2. Select '*Version*' using the UP or DOWN buttons and press the OK button to view the monocular's current firmware.
3. Press the OK button to exit the Version menu.

### 3.4 Playback Mode

Videos and photos captured on your monocular can be easily played back. Press and hold the MODE button to enter Playback mode, a play icon will show in the top left corner of the screen.

Follow the steps below to navigate the Video Playback Mode:

1. Press the UP or DOWN buttons to cycle through the videos and photos stored on the memory card.
2. Press the OK button to start playing a recorded video and press the OK button again to pause the video.
3. Press the MENU button to access the Delete menu, then press the UP or DOWN buttons to select your desired setting (Delete Current, Delete All) and press the OK button to confirm your selected option.
4. Press the MENU button to exit the delete menu without deleting any files.

***NOTE: Deleted media are permanently deleted and cannot be recovered.***

## 4.1 Technical Specifications

<b>Model Number</b>	Bell+Howell BHN20
<b>Magnification</b>	10x
<b>Objective Lens</b>	24mm
<b>Lens</b>	Fixed Focus • F/1.2 Telephone • f=25mm
<b>Field of View</b>	10° / 525ft. @ 1000yds
<b>Observation Distance</b>	10 ft ~ Infinity
<b>Zoom</b>	8X Digital Zoom
<b>Image Sensor</b>	1.3MP CMOS Sensor
<b>Shutter</b>	Electronic
<b>Pixels (photo)</b>	<b>JPEG:</b> 12MP • 10MP • 8MP • 5MP • 3MP
<b>Pixels (video)</b>	<b>AVI:</b> 1080p FHD 1920x1080 1080p 1440x1080 720p 1280x720
<b>LCD Monitor</b>	2.4" IPS LCD Digital Monitor
<b>Assistive Light</b>	850nm Infrared LED Illuminator
<b>Infrared LED Power</b>	5 Watts
<b>Infrared LED Range</b>	10 ~ 984 ft
<b>Power Saving Mode</b>	OFF • 1 Minute • 3 Minutes
<b>Recording Media</b>	MicroSD • Maximum: 32GB
<b>I/O Ports</b>	USB-C
<b>Power</b>	18650; 3.7v, 2,000mAH
<b>Dimensions</b>	4.45 x 3.4 x 2.03 in. • 8.1 oz.

# BELL+HOWELL

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***If you're having difficulties with your monocular, or would like further assistance, please call our toll-free technical support hotline at 800-441-1100. Please be sure to have your monocular handy when calling.***



