

# LUNA OPTICS®

QUALITY YOU CAN SEE...  
EVEN IN THE DARK.®



## LN-G3-B50

**GEN-3 HD DIGITAL TECHNOLOGY  
DAY & NIGHT BINOCULAR 6-36x50**

VERSION M7 V1.11 & V1.12

## INSTRUCTION MANUAL

**IMPORTANT: Please read this manual in its entirety prior  
to using this device!**

## DIGITAL NIGHT VISION TECHNOLOGY:

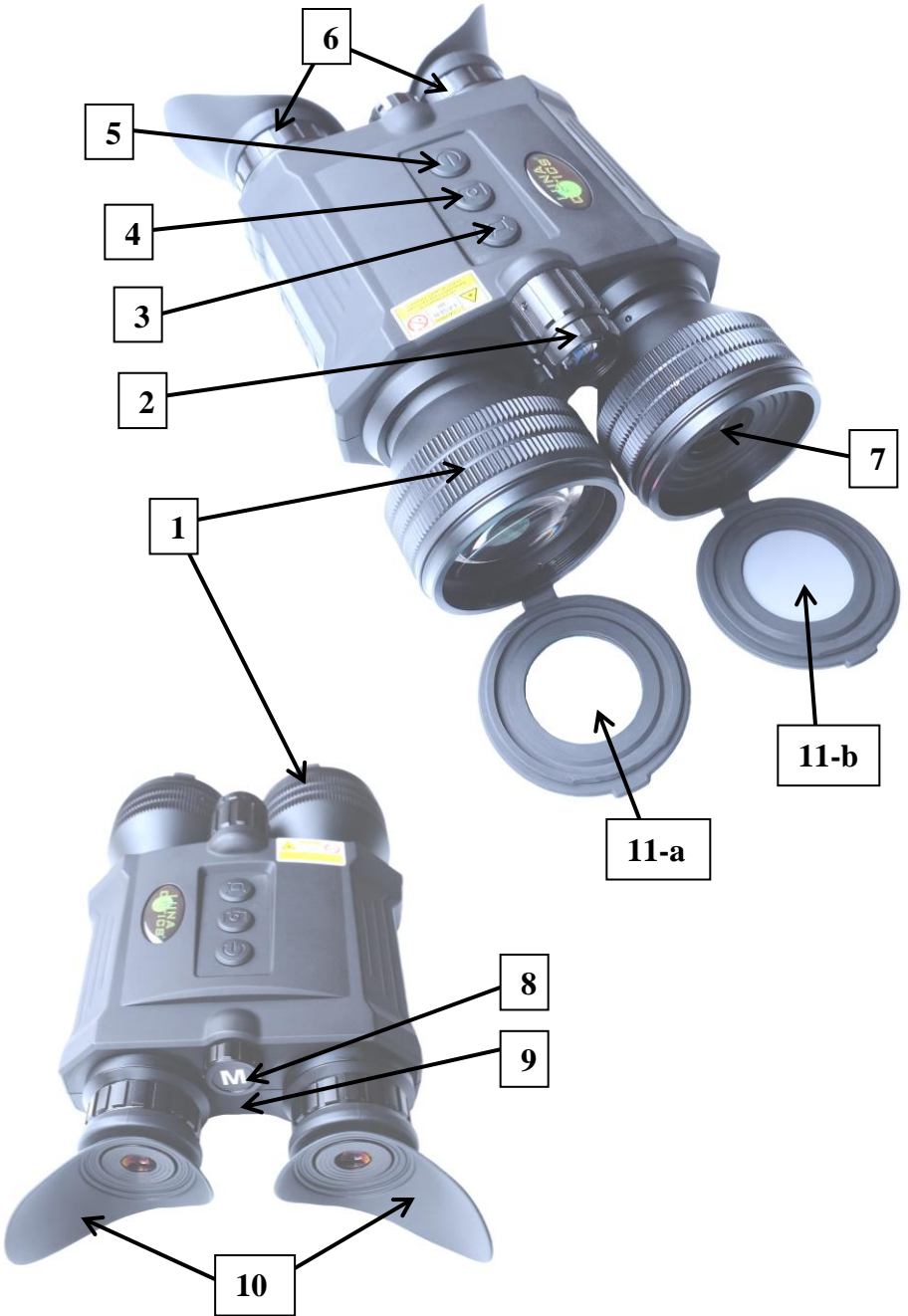
1. Your digital binocular operates with batteries. Unlike a daylight binocular, where you see the image due to light traveling through the glass and the prisms, the digital night vision device works by projecting the image onto an OLED display screen. While the Image Sensor and the OLED display are the crucial components of your viewer, the optical parts of the unit are also very important, as they gather the light into the Image Sensor and then bring the projected image from the OLED screen to your eye. Since the image is projected on the display screen, just like any TV, it has certain limited resolution, so your digital night viewer cannot provide the same crystal clear image, as you see through your daylight binoculars.
2. Your binocular has options of full-color, black and white, night vision green and amber color image – why? Because, while full-color image is an excellent choice during daylight, it is not as effective as monochrome image during nighttime conditions.
3. Your digital viewer is safe to operate during daylight and nighttime hours. **IT IS NOT SAFE FOR YOUR EYES TO LOOK DIRECTLY AT THE SUN THROUGH THIS PRODUCT!** Please note that during daylight you will have to reduce the brightness level of the unit to prevent the image from becoming totally washed out. You should also utilize Color Enhancing Filter, supplied with the unit for daylight operation in order to view more vibrant colors. (Filter is embedded into the front lens cover)
4. For more details on how to operate your viewer, please read this manual completely to ensure proper operation.

## YOUR PACKAGE INCLUDES THE FOLLOWING:

1. LN-G3-B50 Binocular
2. 8GB Micro SD-card (installed into the SD-card slot)
3. Color Enhancing Filter (installed into the front lens cover – daylight use only – remove the lens cover in the dark!)
4. Deluxe Carry Case
5. USB Cable, Micro-SD Card USB Flash Drive Adapter
6. RCA Video Cable
7. 4xCR123A batteries (Optional – NON-RECHARGEABLE!)

**WARNING: it is prohibited to use ANY rechargeable batteries with peak Voltage above 4.2V in this device. Please only use reputable rechargeable batteries brands and battery chargers.**

**Please identify all the parts of the device PRIOR to operation!**



## GLOSSARY:

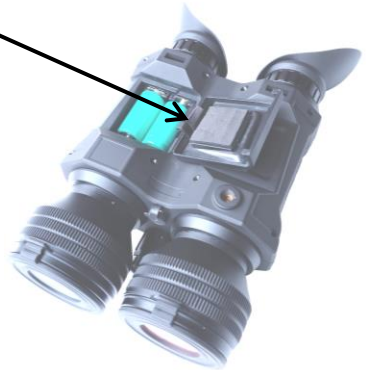
- 1 – Objective Lens Focusing Ring
- 2 – IR Illuminator Focusing Wheel
- 3 – IMAGE Button
- 4 – CAMERA / LRF Button
- 5 – POWER / IR Button
- 6 – Ocular Focusing Rings
- 7 – Rangefinder Lens
- 8 – Menu / Super Controller
- 9 – Power Indicator Light
- 10 – Folding Eyecups
- 11 – Lens Covers:
  - 11-a) Objective Lens Cover with built-in Daytime Color Filter
  - 11-b) Laser Rangefinder Lens Cover

## INSTALLING THE BATTERIES:

Your device operates on four 3V Lithium type batteries, known as CR123A type commonly available in Electronics/Camera/Convenience stores. **NOTE: it is possible to use rechargeable batteries (CR123R) but please make sure each battery peak voltage is equal to or less than 4.2V. Furthermore, rechargeable batteries are not recommended due to significantly shorter operating time!**

**WARNING: if batteries supplied with the unit - they are not rechargeable – do not charge or recharge these batteries!**

To install the batteries, remove the battery cover, located on the bottom of the binocular by gently pressing onto the cover and at the same time sliding it in the direction shown by arrow on the cover. Please note the battery cover has an attached ribbon, which has two functions: one is to prevent the battery cover from being lost in the field and second, to allow for easier batteries removal by placing the ribbon under the batteries during installation. Since there are 4 batteries that need to be installed, place the ribbon under the bottom 2 batteries, then place it again between the bottom and top batteries. Always follow polarity when installing the batteries, placing negative (-) end onto the metal springs. Replace the cover by sliding it back until you hear a clicking sound indicating the cover has locked into place. Always make sure the cover is locked securely prior to using the binocular in the field.



## OPERATING FROM A USB POWER BANK: BEST POWER OPTION

Your digital viewer can also operate from the commonly available 5V USB Power Bank chargers. Please make sure the output of the Power Bank is BETWEEN 2.0A and 2.4A, as less powerful output may fail to power the unit especially when the IR

illuminator or Video/Wi-Fi functions are activated and more powerful output is not necessary and may make power supply area hot to the touch. To connect the Power Bank, open the Connection Area rubber cover by gently pulling it outward and then swing it counter-clockwise to the right and locate the Micro-USB-C connector

Connect the small end of the USB cable (included) to the connector and then connect the large end of the cable into Power Bank output. You may need to activate the power bank first, prior to turning the viewer on. We strongly recommend operating this binocular from a power bank when long time observation is required and when binocular is utilized on a tripod in a fixed position.



## DAYLIGHT COLOR ENHANCING FILTER:

Your binocular is equipped with a unique daytime color enhancing filter, which provides vibrant and accurate colors rendition (digital image sensors are known to distort colors and provide an unnatural color image during daytime). The filter is embedded into the objective lens cover (11-a) and we strongly recommend keeping it on during daytime use in order to enjoy vibrant daytime color images. During nighttime you will need to remove the lens cover, because the color filter will block most of the built-in IR illuminator's light.

## TURNING THE UNIT ON / FOCUSING THE UNIT / TURNING IT OFF:

To turn the unit ON, press the POWER Button (5) momentarily. The LED Power Indicator (10) located on the back of the unit should light up in green color. Look through the eyecups (6) – you should see the Welcome screen for a few seconds, followed by the initial image showing alphabet and numbers. Once you see this image you can



begin the eyepiece focusing process. With right eye closed focus the left eyepiece until you can clearly see letters and numbers. Then close the left eye and focus the right eyepiece. Open both eyes and the image should be mostly clear. If the image is still not 100% clear, fine-tune each eyepiece until you can uniformly see all letters and numbers with both eyes open. You may also need to adjust the physical distance between the eyepieces (inter-pupillary distance) by grasping both eyepiece assemblies and either pulling them apart or pushing them closer to each other. Once the uniformed and sharp image is obtained, you no longer need to adjust the two eyepieces. Now press the power button momentarily and the letters/numbers will disappear from the screen. (**NOTE:** the initial screen will automatically disappear after some time. If you are not done focusing the eyepieces, you may continue doing so by focusing on the on-screen display icons.)

Now it is time to focus the front objective lens to the distance of the object you wish to view. Rotate the Objective Lens Focusing Wheel (1) focusing at the object until the image is at its best. Once the clear image is obtained, you will no longer need to adjust the eyepieces, just rotate the front objective lens to adjust the distance to the object you are viewing.

**IMPORTANT:** Only one front objective lens assembly (on the right side of the binocular) need to be rotated to distance-focus the binocular. The second front assembly houses laser rangefinder unit and is not involved in the focusing process. It cannot be rotated and please do not under any circumstances try to rotate this lens assembly.

To turn the unit OFF, press and hold the POWER Button for 2 seconds. The image will disappear if you turn the unit off correctly. Always replace the protective lens cover after the unit is turned off and no longer in use.

**IMPORTANT:** When turning the unit ON or when operating the unit with Wi-Fi stream activated, it is normal to see some image flickering in the display. This is normal and does not affect the unit. If the flickering does not disappear once the unit is up and running and Wi-Fi is no longer active, please re-start the unit. If conditions persist, please contact us at: [info@lunaoptics.com](mailto:info@lunaoptics.com) for assistance.

**ON-SCREEN DISPLAY ICONS:**

Laser Rangefinder Reticle

Distance Readout and Measuring Unit



Record Mode

IR Power Level

Magnification

Date & Time

Power source



## MENU / SUPER CONTROLLER FUNCTIONS:

Your binocular features a unique and user-friendly adjustment called Super Controller (8). It incorporates various operating functions and makes navigating and adjusting menu functions fast, easy and natural without having to take your eyes off the eyepieces in the field. It is especially useful when using in the dark conditions where button location may be particularly difficult. Controller activates the Main Menu by pressing and holding onto it for 2 seconds.



### Once activated, all Menu navigation is done the following way:

- **Scrolling through the menu contents:** rotate the Super Controller in either direction (each click scrolls the menu by one step)
- **Selecting and confirming function:** short-press onto the Super Controller
- **Return from selected function to Main Menu:** Press and Hold onto Super Controller for 2 seconds.
- **Return from subchapter or from 2<sup>nd</sup> page:** highlight "Back" circle and short-press Controller
- **Exiting the Main Menu:** Press and Hold onto the Super Controller for 2 seconds



## ***MAIN MENU consists of the following selections:***

### **VIEW MODE:**

- **DAYTIME:** this setting presents image in natural full color, best suited for daytime viewing and recording
- **BLACK & WHITE:** this setting presents the image in monochrome black and white color (preferred for nighttime urban settings)
- **GREEN:** this setting presents image in traditional night vision green color (good for nighttime field settings)
- **AMBER:** this setting presents image in soft Amber color (good for highly detailed image during variety of low-light conditions and for car headlights glare)

**SEE PAGE-12 FOR MORE INFORMATION ON IMAGE COLOR SELECTION**

### **RECORD MODE:**

- **VIDEO:** In this mode short pressing the Camera/LRF button (4) starts or ends video recording (SEE PAGE-14 FOR MORE INFORMATION)
- **PHOTO:** In this mode short pressing the Camera/LRF button snaps a still image (SEE PAGE-15 FOR MORE INFORMATION)

### **WI-FI:**

- **OFF:** Wi-Fi is turned OFF (default setting)
- **ON:** Wi-Fi is turned ON (SEE PAGE-16 FOR MORE INFORMATION)

### **RANGEFINDER:**

- **RANGING MODE:** Opens sub-menu as follows
  - OFF:** Laser Rangefinder is OFF
  - ON (MANUAL):** Laser Rangefinder is in manual mode – user can measure distance by pressing and holding the Camera/LRF button for 2 seconds.
  - ON (AUTO):** Laser Rangefinder is in automatic mode – it will continuously measure the distance every 2-3 seconds.
- **RANGING UNIT:** Opens sub-menu as follows
  - YARD:** distance will be measured in Yards
  - METRE:** distance will be measured in Meters

### **PLAYBACK:**

- Selecting this mode will allow you to review and play back the images and videos directly on your binocular. To exit this mode press and hold the Controller for 2 seconds

### **SETTINGS:**

- **Opens the Settings Chapters as follows:**



## ***SETTINGS MENU consists of the following selections:***

### **ELECTRONIC ANTI-SHAKE (IMAGE STABILIZER):**

- **OFF:** Electronic Image Stabilizer is turned off (default setting)
- **ON:** Electronic Image Stabilizer is turned on (**SEE PAGE-14 FOR MORE INFORMATION**)

### **RESOLUTION:**

- **QHD @30FPS**
- **3MHD / 30FPS:**
- **FHD 1080p / 60FPS:**
- **FHD 1080P / 30FPS:**
- **HD 720P / 30FPS:**

### **CAPTURE MODE:**

- **Take Pictures Now:** select if you want no delay in capturing still image. Image will be captured as soon as the camera button is pressed.
- **Delay 3S:** device will count down 3-2-1 and then image is captured
- **Delay 5S:** device will count down 5-4-3-2-1 and then image is captured
- **Delay 10S:** device will countdown 10 seconds and then image is captured

### **TV MODE:**

- **NTSC:** select when connecting to TVs in North America (*including USA*), Latin America and Caribbean, South America (*except Brazil, Uruguay and Argentina*), Japan, South Korea, Taiwan, Philippines and Myanmar.
- **PAL:** select when connecting to TVs in Western Europe, Northern, Eastern and Southern Africa, Middle East, India, Southeast Asia, Australia and New Zealand

### **TV OUT:**

- Select prior to connecting the Video cable to your TV or monitor (binocular displays will turn off during Video connection)

### **FACTORY RESET:**

- **Cancel:** Exit to main menu
- **OK:** Returns binocular to factory settings

### **FORMAT CARD:**

- **Cancel:** Exit to main menu
- **Format Card:** Formats micro-SD card (***ALL FILES WILL BE ERASED!***)

### **DATE/TIME:**

- Select when setting or updating date and time (**see PAGE-11 for more information**)

### **VERSION:**

- Displays current software version installed in your device. (*In case of any technical questions or malfunction, our customer service may ask for the software version*)

### **LANGUAGE:**

- Select to change language from English to German, French and Spanish

## ELECTRONIC IMAGE MAGNIFICATION ZOOM:

Your unit is also equipped with electronic zoom function, which allows you to change image magnification from 6x to 36x. To increase the image magnification rotate the Menu / Super Controller (8) to the right (clockwise) and look into the eyepieces – you will see the image magnification increase with each rotation click by 3x. See below the magnification chart according to each rotation:

**6.0x – 9.0x – 12.0x – 15.0x – 18.0x – 21.0x – 24.0x – 27.0x – 30.0x – 33.0x – 36.0x**

You can observe the current magnification level on the bottom of the image display once you start rotating the Super Controller. To decrease the image magnification, rotate the Super Controller to the left (counter-clockwise) and image magnification will decrease by 3x with each rotation. Factory default setting is 6x

**NOTE:** During any image magnification adjustments, please avoid pressing onto the Super Controller, as this may activate the device main menu.

## POWER & IR BUTTON (5):

- Initial short-press – turns the power ON
- When power is ON, single short press activates 1<sup>st</sup> power level of IR illuminator. There are 3 power levels – each consecutive short-press increases the power by one level. 4<sup>th</sup> short-press turns the IR illuminator OFF
- When power is ON, long-press shuts the power OFF



## CAMERA/LRF BUTTON (4)

- Factory default recording mode setting is Video. Short-press activates video recording. During video recording, short press ends recording and video is automatically saved onto micro-SD card.
- When recording mode is switched to Photo, short press will activate still image capture (system will make a short count down and then capture the image)
- When Laser Rangefinder is activated via main menu, long-press on Camera Button activates rangefinder distance measurement. Each subsequent long-press activates Rangefinder distance measurement.



**NOTE: short pressing camera button while rangefinder is activated will still start video recording (if device is in Video mode) or will take a still image (if device is in Photo mode)**

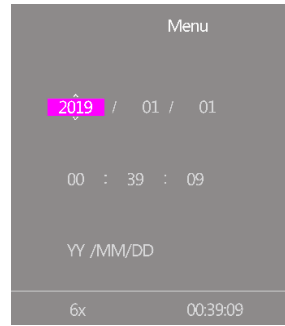
## IMAGE BUTTON (3)

- Adjusts OLED displays brightness. Each short-press increases the display brightness by one level. There are 7 brightness levels and the factory default setting is level-3. **See page-13 for more image brightness adjustment information**



## SETTING UP DATE AND TIME:

As your viewer has capability to take images and record video, time and date is automatically stamped onto each image and video recording. To set the correct date and time, please follow this procedure:



Turn the unit ON. After image appears, press onto the Menu/Controller (8) and hold it for approximately 2 seconds to activate the menu. Select "Settings", then "Date/Time" To adjust the numbers, rotate the Controller in either direction. To switch between numbers, short-press onto Controller. After Date is set, adjust the time. Time is in 24hr format, so 13:00 is 1pm; 17:30 is 5:30pm and so on. As with the date, changing hours and minutes is done by rotating the Controller and moving between hours and minutes is done by pressing onto it. Once the time is adjusted you may choose to change the date format to MM/DD/YYYY or YYYY/MM/DD according to your preference. Once you are finished setting date and time, you can exit the menu by pressing Controller for approximately 2 seconds. Once set, the time will be displayed on the bottom of the image display 2.

**IMPORTANT:** in order to preserve the set date/time do not remove the dead batteries from the unit until you are ready to replace them with the new set, then replace the old batteries with new set as quickly as possible and the date/time will be preserved.

## USING INFRARED ILLUMINATOR:

Your digital viewer is equipped with a built-in powerful Infrared illuminator light (2). This light operates in a spectrum, which is normally invisible to a human eye, however with the help of the Image Sensor, located inside the binocular, you will see a beam of light when looking through the ocular lens. Since the Image Sensor does not actively amplify the available light, you will need to utilize the IR illuminator often in the nighttime conditions.

**WARNING: Your IR illuminator is a Class-3R laser product. DO NOT LOOK DIRECTLY INTO THE IR ILLUMINATOR LENS WHILE THE ILLUMINATOR IS ON!**



To turn the Infrared illuminator ON, short press the Power & IR button (5) – the IR icon on the bottom of the display will light in pink color. The illuminator intensity can be further increased by short-pressing the IR button (5) second and third time. The IR icon in the image display will change colors from pink to orange to red,

indicating the three different power levels. After the red level (3<sup>rd</sup> and most powerful) the next short press on the IR button will turn the IR off completely.

When using the infrared illuminator it is important to remember that like a flashlight, it is brightest when used in short distances. As the distance increases, the intensity of the infrared light fades away. The illuminator lens can be focused by rotating its front lens barrel (2). This allows for the IR beam to be widened (shorter effective distance) or narrowed (longer effective distance).

**IMPORTANT:** whenever operating IR illuminator please note that batteries working time will be significantly diminished, especially when IR is on the 2<sup>nd</sup> and 3<sup>rd</sup> power levels. This is due to the high power consumption of the IR diode. Whenever the conditions allow, consider using IR on the 1<sup>st</sup> (lowest) power level and only utilize 2<sup>nd</sup> and 3<sup>rd</sup> power levels when absolutely necessary.

### **IMAGE COLOR OPTIONS:**

The binocular has 4 distinct image colors, which are suitable for a variety of light and terrain conditions. In order to change the image color, you just need to momentarily press onto the Menu/Controller. Each press will switch to the next available color according to this order:

- **Daytime mode** (default mode) displays images in full-color. This is preferred mode for daytime use as well as when enough artificial light is present (inside a well-lit room). If used during nighttime the overall sensitivity of the image sensor will be significantly reduced and, as you must remove the daytime color filter during nighttime, the image colors will no longer have true reproduction.
- **Black & White mode** displays images in monochrome black and white. This mode is particularly useful during nighttime city/urban settings when it might be important to read the street signs or automobile plates or similar situations where highest contrast between light and dark colors is necessary.
- **Green mode** allows you to experience image as seen with traditional “intensifier tube” night vision devices. This mode is best utilized at nighttime only in the clear field/rural settings
- **Amber mode:** this unique and state-of-the-art color mode may be used in a variety of nighttime conditions when highest detail of the object is required. It provides excellent sharpness and contrast similar to Black & White mode, but is also highly useful in rural/terrain observation settings, by adding an Amber hue and making images look color-like without losing any nighttime sensitivity. This color mode is also very useful for dark and rainy days, as well as for dusk and dawn conditions and for conditions where direct/projection light is present, for example automobile headlights, as it helps to mitigate the light glare.

## **IMPORTANT: PLEASE READ!**

Due to the inherited limitations of any digital image sensor, video refresh rate will be significantly slower during nighttime, resulting in visible image lag/delay when using your monocular in the dark. It is important to take the following steps to minimize this effect and ensure the best possible image and video recording quality:

- During nighttime and in any dark condition activate built-in IR illuminator – it will provide extra light needed for the image sensor to “speed up” its refresh rate and image delay will be minimized.
- During nighttime you need to remove the daylight color enhancing filter – it will block most of the Infrared light from the built-in IR illuminator resulting in very dark image.
- Always try to utilize a quality tripod for any video recording done at nighttime. This will ensure steady placement and will minimize image delay when filming a moving object.

## **BRIGHTNESS ADJUSTMENT:**

Your digital viewer is equipped with dual image brightness control. An automatic picture optimization sensor adjusts the image according to the available ambient and artificial light. In addition a manual Image Brightness Button (3) allows you to fine-tune the image brightness to the most comfortable level. Please note that during daylight you will need to tone the brightness down to avoid image flickering and/or washout and to preserve the battery life. During nighttime you could increase the brightness all the way up, however when utilizing built-in IR illuminator, you may still need to tone the brightness down. Each short press onto the IMAGE Button (3) will increase brightness by one level until it reaches maximum level – then it will reset to the lowest brightness setting.

## **USING LASER RANGEFINDER:**

Your BINOCULAR is equipped with a built-in and fully integrated Laser Rangefinder (LRF), allowing you to quickly range targets up to 700m (760yds). There are two modes of operating LRF: manual and automatic (continuous). Manual mode gives you the option of measuring the distance to the object only when you want it done, while automatic mode allows for continuous distance measurement as you scan the terrain. Please note that automatic mode will negatively affect the batteries working time, so unless you specifically require constant distance reading, we recommend to use manual mode.

To activate rangefinder go to the main menu by pressing onto the Menu/Controller and holding it for more than 1sec. Once Main Menu is accessed, rotate the controller clockwise until you highlight “Rangefinder”, then short-press the controller to activate the Rangefinder Menu.

Once there, highlight Ranging Mode and then choose “Manual” or “Auto”. Once chosen, the system will automatically exit the Menu and return back to the live

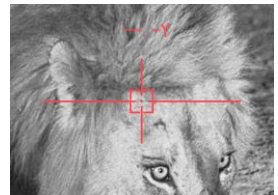


image. The rangefinder reticle and unit of measurement (M=Meters, or Y=Yards) will be displayed. To switch the Measuring Unit, activate Main Menu, then “Rangefinder”, then highlight “Ranging Unit” and select the unit of measurement you desire. Once selected you need to manually exit the menu by pressing onto the Menu/Controller for 2 seconds.

**IMPORTANT: TO UTILIZE LASER RANGEFINDER YOU MUST REMOVE THE PROTECTIVE RANGEFINDER LENS COVER (11-b).**

Once the rangefinder is activated, in Manual mode, you will need to press and hold the Camera/LRF button (4) for 2 seconds until the distance is displayed.

**IMPORTANT: Please be aware that if you press the button momentarily, video recording will start, therefore if you only wish to measure the distance you must hold the button for 2 seconds.**

As with any rangefinder, maximum measuring distance will depend on the size and reflective capabilities of the target. Smaller objects, objects in dark colors, objects with non-reflective material/matter will not range to the maximum distance specified in this manual. Large objects, objects in lighter colors and objects with highly reflective finishes (such as buildings or structures finished in tile or polished stone, as well as traffic road-signs or flags will provide more reliable readings at or close to the maximum specified distance)

In Auto mode, the rangefinder will continuously beam and read distance of any object aligned with the rangefinder reticle. Please be aware that laser beam, when active, may be easily seen by anyone using night vision equipment or by wildlife animals. (**HINT:** it is also possible to continuously range in Manual Mode by holding and not releasing the CAMERA/LRF button)

## **ELECTRONIC ANTI-SHAKE**

Your binocular is equipped with an Electronic Anti-Shake (EAS) also known as “Image Stabilizer”, which helps compensate some shake during video recording. To activate, enter Main Menu, then enter Settings – highlight EAS icon and turn it on. Once active, EAS icon will appear on the bottom of the image display when it is working.

**IMPORTANT:** when EAS is activated image Zoom will no longer be possible and system will be fixed on 6x optical magnification. If you must utilize Zoom, you will need to turn EAS off.

## TAKING PICTURES AND RECORDING VIDEOS:

### **WE STRONGLY RECOMMEND MOUNTING YOUR DEVICE ONTO A STEADY TRIPOD WHEN RECORDING VIDEO OR TAKING STILL IMAGES – PARTICULARLY WHEN WATCHING DISTANT OBJECTS AND/OR UTILIZING ZOOM FUNCTION**

Your digital viewer has the ability to take High-Resolution pictures and record HD videos onto the external Micro-SD card. 8GB card is included with your unit and it is already installed into the SD-card slot. The Micro-SD card can be upgraded up to 128GB, which is especially useful if you plan to record a lot of videos **See RE-FORMATTING 64 & 128GB CARDS TO FAT32 FORMAT on page 18 for important instructions.**

Your binocular features a multi-use CAMERA/LRF button (4). It can be used to record video, capture still images or measure the distance with the built-in laser rangefinder. You can switch the main function of this button (Video or Still Image) by activating the Main Menu and selecting Record Mode function and then select either **Video** for video recording or **Photo** for still image capture. Default mode is always Video. **Please refer to Page-7 for instructions on how to use Super Controller and Menu options.**

**VIDEO:** To record a video, focus the unit onto the object and momentarily press CAMERA/LRF button. The system will start recording. To stop recording, press CAMERA button momentarily once again. During recording it is still necessary to re-adjust the front objective lens focus (1) if you wish to record different objects, located at different distances. There are 4 different video recording resolution options:

1. **QHD (Quad-HD resolution) at 30FPS:** When highest video resolution and crystal clear image is necessary both: daytime or nighttime. Provides brilliant image details, very close to 4K, without sacrificing the nighttime sensitivity. Best choice for viewing video files on 4K TVs.
2. **3MHD / 30FPS:** Very close in quality to QHD but allows for more video files to be stored on memory card. Excellent choice for those who plan to watch the video recording on 4K TV or monitors but wish to save more space on memory card.
3. **FULL-HD 1080P / 30FPS:** Blue-Ray quality recording. Best for recording in daylight with color filter on and when mounted on tripod.
4. **FHD 1080p / 60FPS:** best mode for recording moving objects (animals, birds, sports etc.) as well as when tripod mounting is not possible. Choose this resolution for both: nighttime and daytime **action** recording.
5. **HD 720P / 30FPS:** best choice for smaller size video recording files. Allows for more video files to store on a memory card and still provides excellent image when viewed on 720p or higher resolution HDTV.

**PHOTO:** To take a still image, access Main Menu, then enter Record Mode function and select Photo. Then focus the unit onto the object you are viewing and with a steady hand gently press the CAMERA button momentarily. Depending on the Capture Mode setting (see page – 9) the image will either be captured immediately, or the display will give a visual countdown and then image is taken and is automatically stored onto the SD card. All still images are taken at 5360x3008 resolution (16.1MP).

**IMPORTANT:** once your micro-SD card reaches its capacity, video recording and still image taking will no longer be possible and **“SD Card”** will be displayed, indicating it is time to either replace the card or empty your current card. This feature acts as a safeguard to prevent accidental over-writing your existing video and photo files.

**IMPORTANT:** If you see **“Memory Error”** message displayed, your micro-SD card is either bad, or, if you have a 64GB or 128GB card, it is not operating in FAT32 format. **Please refer to page 18 for re-formatting instructions.**

### **SD-CARD REMOVAL, DATA VIEWING AND TRANSFER OPTIONS:**

It is possible to view the images and videos directly on the unit’s micro-display. To do so, while the unit is operating access the Main Menu and choose **“Playback”**. Once in the Playback Mode you will be able to switch between photos and videos by rotating the Menu Controller and short-pressing Controller will activate any video file. To exit the Playback Mode simply press Menu Controller for 2 seconds. NOTE: if you need to edit or delete files, you must remove the micro-SD card from device and do this operation on your computer.

Alternatively, you can remove the micro-SD card from the monocular and use it directly via the micro-SD card slot in your laptop, or if you don’t have a direct slot, use it in the included USB flash drive adapter to transfer data to your computer.

Carefully open the Connection Area rubber cover by gently pulling it from the left side outward and then swing it counterclockwise to the right and locate the Micro-SD Card Slot. Gently push onto the micro-SD card and it will pop out. It is also possible to utilize the full-size SD card adapter (not included with binocular). To replace the micro-SD card gently push it back into the slot until it clicks and stays in it. **Do not use force when removing or replacing the Micro-SD card from the slot!**





## CONNECTING TO EXTERNAL VIDEO SOURCE:

You can connect your device to the TV or a video monitor, via the RCA video cable (included with your device). Video output is located at the front of the binocular. Please use the included video cable, which has a special curved plug in order to provide easy connection to the binocular. In order to make the connection, you must first access the menu and scroll down to Settings and then find and activate the TV Out mode. Then connect the cable between the binocular and the video monitor.



**IMPORTANT:** Please note that when device is connected to any video monitor or TV, it may be impossible to connect via Wi-Fi to the App **during active video recording**. If you wish to connect to the Wi-Fi App, you will need to first discontinue video recording and then connect to Wi-Fi.

## WI-FI LINK AND OPERATION INSTRUCTIONS:

1. Download “**ROADCAM**” App on your Android phone/tablet or on iPhone/iPad. For Android users, if you have a problem finding the app in Google Play Store, please scan the QR code below
2. Enter Main Menu and scroll to Wi-Fi selection. Turn the Wi-Fi ON. Now look through the eyepiece and observe the Wi-Fi signal name (typically **M7\_ followed by a set of numbers**) and Password (typically **12345678**).
3. Find the device Wi-Fi signal on your phone (same as shown on the unit’s display) and select it.
4. Enter password
5. **Once connected make sure your phone is allowed to stay connected to this Wi-Fi signal even though there is no internet available.** This will prevent frequent automatic disconnects by your phone, as it tries to find a better internet connection.
6. Now open the app and it will display the device name (**M7...**) below the orange cam symbol – simply touch the cam symbol and app will connect to the device. **Please note** – once app is connected to the device video recording starts automatically.
7. Follow on screen menu on your smart device to utilize the available features of the app. We suggest leaving the device in Video mode, since it is possible to snap a photo via app control at any time during live video stream.
8. During streaming it is possible to change image colors by short-pressing onto the Controller.



9. **NOTE:** during Wi-Fi streaming the ZOOM function is disabled and cannot be utilized!
10. **NOTE:** during Wi-Fi streaming long press onto the Controller deactivates Wi-Fi function altogether.
11. If the App shuts down during normal use, please re-start it, or re-install it on your mobile device if it happens more than twice.

## **RE-FORMATting 64GB & 128GB MICRO-SD CARDS TO FAT32 FORMAT:**

Any micro-SD card above 32GB needs to be re-formatted from EXFAT format to FAT32 format, which is the format of the night vision monocular (and many other consumer electronics). Please note that FAT32 is the most widely used format and is also considered the most reliable format.

In order to re-format the card you must run it through a 3<sup>rd</sup> party provider. We suggest using Disk Partition. While nearly all of the providers would want you to buy their upgraded versions, you can just download their basic free version and it would be sufficient to re-format the card. Disk Partition seems to be the most simple and hassle-free provider we could find:

<https://www.disk-partition.com/download.html>

- Download the “Standard Free” version and follow all the download instructions.
- Once downloaded, open the program and insert the micro-SD card into the computer.
- Highlight the correct disc by single-click and then choose on the bottom left side of the menu to “Format Partition” (alternatively right-click on the highlighted disc and choose the same function). A pop-up window will appear. You can label your partition (such as “Luna Optics Monocular” or any other name you desire (it’s optional) and then make sure to select “FAT32” as the File System. Then click “OK”.
- Once the format is finished, click on “Apply” located in the most upper left corner. You must select “Apply” otherwise the formatting is not finished.
- Your card is now formatted, but before you can use your 64/128GB card in our digital night vision product you must also format the card inside the product. To do so, insert the card into its slot (11-c), turn your monocular on and through the menu find and select “Format”, then select “OK”. Once the card is formatted inside the night vision device it is now ready to use.

## TROUBLESHOOTING:

1. Unit does not turn on and the light indicator is off:
  - a) please check if the batteries are inserted correctly
  - b) please make sure the batteries are fresh
2. The light indicator is working, but you cannot see the image:

You may be turning the unit on in a dark area without utilizing the IR illuminator. Please also remove the Daytime Color Filter.
3. Unable to obtain sharp and clear image:
  - a) you may need to repeat the process of rotating the oculars and objective lens several times until you get a good feel of it
  - b) You may be viewing an object that is too close – the minimum focusing distance is approximately 80cm or 2.6ft
4. During image magnification adjustment color changes or Main Menu activates:

You have accidentally pressed onto the Super Controller. If Menu appears, press onto it again for approximately 2 seconds and Menu will disappear.
5. I'm trying to turn the IR illuminator on and instead the unit shuts down:

You are holding the Power/IR button for more than 1 sec. In order to turn the IR illuminator on, you must press the button only momentarily.
6. I'm trying to measure the distance but I trigger video recording:

You are releasing the Camera/LRF button too soon. You must press and hold it for approximately 2 seconds or until the readout is displayed.
7. I'd like to use a 64GB or a 128GB micro-SD card, but it's not working or is not recognized:

Your 64GB or 128GB micro-SD card must be re-formatted to FAT32 format. Please refer to page-18 for re-formatting instructions

## WARNING! NEVER ATTEMPT THE FOLLOWING:

- **NEVER try to disassemble the unit by yourself or by anyone who is not our authorized technician! Doing so may result in injury and will void any warranty claims!**
- **NEVER charge batteries included with the unit – they are not rechargeable!**

- **NEVER** submerge the unit into water or use it during heavy rain!
- **NEVER** look directly at the sun through this device!
- **NEVER** Look directly into the IR Illuminator lens while IR is ON!

## TECHNICAL SPECIFICATIONS:

Image Sensor Resolution / Sensitivity: \_\_\_\_\_ Quad-HD 2560x1440 / 0.002lux  
 Image Display: \_\_\_\_\_ Dual 0.38" HD AMOLED-Q 1280x720  
 Still Image resolution \_\_\_\_\_ 5360x3008 (16.1MP) JPEG  
 Video resolution (signal) \_\_\_\_\_ Quad-HD AVI  
 Video Recording options: \_\_\_ QHD(30fps); 3MHD(30fps); FHD(60/30fps); HD(30fps)  
 Image Magnification \_\_\_\_\_ 6x-36x  
 Objective Lens \_\_\_\_\_ F1.0/50mm  
 Ocular Diopter Range \_\_\_\_\_ +/-5  
 Inter-Pupillary Distance \_\_\_\_\_ 59mm - 71mm  
 Focusing Distance \_\_\_\_\_ 80cm (2.6ft) - ∞  
 Viewing Distance (daylight, 6x) \_\_\_\_\_ 2000m (2180yds)  
 Viewing Distance (IR complete darkness) \_\_\_\_\_ 600m (654yds)  
 IR Illuminator: \_\_\_\_\_ Class 3R, 850nm, 1W  
 Laser Rangefinder Maximum Distance (large reflective targets) \_\_\_ 700m (763yds)  
 Laser Rangefinder: \_\_\_\_\_ Class-I 905nm  
 Field Of View \_\_\_\_\_ 10°  
 Memory \_\_\_\_\_ Micro SD card (up to 128GB)  
 Wi-Fi \_\_\_\_\_ Android/iOS  
 Battery Power \_\_\_\_\_ 4 x 3V Lithium (CR123)  
 External Power \_\_\_\_\_ 5V/2A micro-USB-C  
 Operating Time (4xCR123A batteries, IR off, no video/Wi-Fi) \_\_\_\_\_ 4.5hrs  
 External outputs \_\_\_\_\_ micro-USB-C / RCA-V  
 Dimensions \_\_\_\_\_ 190mm x 126mm x 76mm (7.5"x4.9"x2.9")  
 Weight \_\_\_\_\_ 980g (2.2lbs)  
 Warranty \_\_\_\_\_ 2yrs