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LN-DM60-HD

HIGH DEFINITION DIGITAL DAY &
NIGHT VIEWER / RECORDER

INSTRUCTION MANUAL

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

DIGITAL NIGHT VISION

1. Your night vision viewer 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 LCD screen. While the CCD/CMOS sensor and the LCD 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 CCD/CMOS sensor and then bring the projected image from LCD screen to your eye. Since the image is projected on the 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. **Another important point** – your digital night vision viewer has full color image during the day and option of color / night vision green / black & white images when operating with IR illuminator – why? Because full color image sometimes washes out the details in the dark and will not be as effective as monochrome image during nighttime conditions. The night vision green color was chosen because green color shows more details than any other color in the palette and black & white image is especially useful when reading text or building signs or car plates.
3. Your digital viewer is intended for operation during daylight and nighttime hours. 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.
4. For more details on how to operate your viewer, please read this manual completely to ensure proper operation.

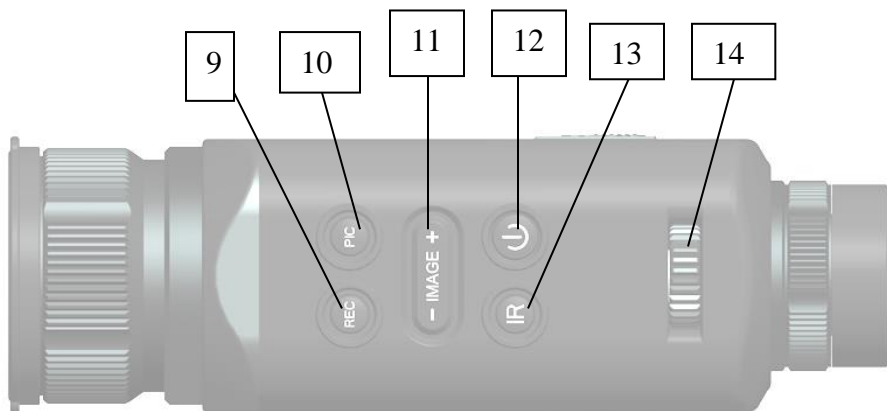
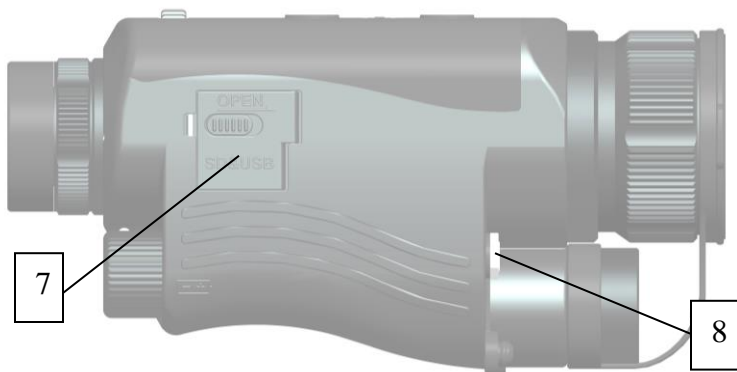
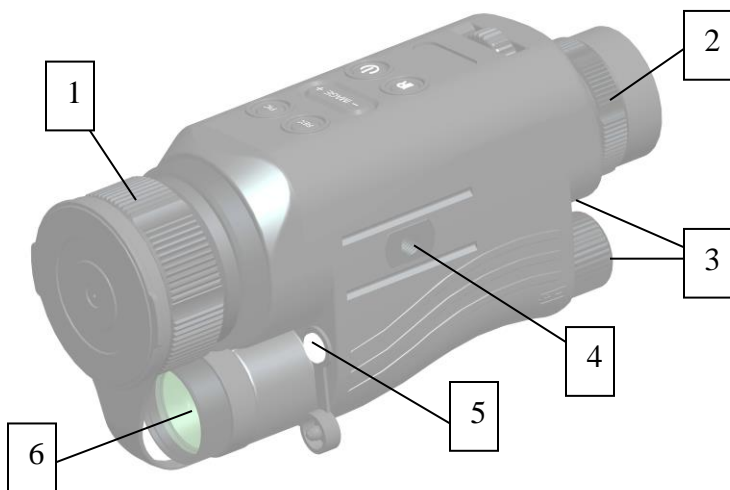
YOUR SYSTEM INCLUDES THE FOLLOWING:

1. LN-DM60-HD Digital Night Vision Viewer/recorder
2. 8GB Micro SD-card (installed into the SD-card slot)
3. Color Enhancing Filter (Daylight use only for vivid colors)
4. Carry case with shoulder strap
5. DC adapter with US plug (EU plug adapter included for International customers) (110V/240V compatible)
6. Video Cable and USB Cable
7. Battery charger (**Warning: included batteries are not rechargeable!**)

WARNING! NEVER ATTEMPT THE FOLLOWING:

1. 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
2. Charge batteries included with the unit – they are not rechargeable!
3. Leave the batteries inside the unit while operating it from the AC/DC source! You must remove the batteries prior to connecting the cord!
4. Submerge the unit into water or use it during heavy rain.

Please look below to identify all the parts of the unit.



Glossary:

1 – Objective Lens Focusing Wheel
2 – Ocular Focusing Wheel
3 – Battery Compartments
4 – Accessory / Tripod Mount
5 – Video Output
6 – Infrared Illuminator
7 – SD-Card / USB Compartment
8 – DC Output

9 – Video Recorder Button
10 – Still Image Button
11 – Image / Zoom Button
12 – Power ON/OFF Button
13 – Infrared / Menu Button
14 – Brightness Toggle Wheel
15 – SD-Card Slot
16 – USB Output

INSTALLING THE BATTERIES:

Your night vision unit operates on two 3V Lithium type batteries, known as CR123 type commonly available in Electronics/Camera/Convenience stores.

NOTE: it is possible to use rechargeable batteries, but please make sure each battery peak voltage is equal or less than 4.2V. You can charge the rechargeable batteries via included CR123 battery charger.

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

WARNING: it is prohibited to charge any batteries inside the unit or have batteries inside the monocular while operating it from wall outlet!

To install the batteries, unscrew the battery compartment covers (3), located on the back of the unit (one on each side below the ocular (2) and install one battery into each compartment inserting the positive (+) end first. Once the batteries are inside, replace the covers.

TURNING THE UNIT ON AND OFF:

Your night vision unit has one-touch push-buttons. To turn the unit ON, first remove the objective lens cover and press the power button (12) once and immediately release it. The green light indicator located on the back of the unit should light up. Look through the ocular – you should see the Welcome screen for a few seconds, followed by image. Even if the image is not yet sharp, the unit is operating. 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 objective lens cover after the unit is turned off and no longer is in use to protect the lens.

IMPORTANT: When turning the unit ON it is normal to see some image flickering, as the components warm up to display the image. This is normal

and does not affect the unit. If the flickering continues after 5-10seconds, please try to decrease the brightness of the image by gently pushing the Brightness Wheel (14) to the left.

CONNECTING TO THE DC ADAPTER:

Your digital viewer can also operate from a common wall outlet with the use of the plug adapter (included). Insert the adapter cord into the DC Output (8) and connect adapter to the wall outlet. **IMPORTANT: Always remove the batteries prior to operating the unit from wall/car outlet!**

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 IR Button (13) and hold it for 2 seconds to activate the menu. Select Date/Time function with Image button (11). Default date format is DD/MM/YYYY. To adjust the numbers, press Image Button (11) either in + or – direction. To switch between date/month/year, press IR button momentarily. 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 with Image button (11) either + or – and moving between hours and minutes is done via IR button (13). 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 must confirm your setting by pressing REC button (9).

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.

FOCUSING THE UNIT:

To obtain the sharp image, you must first rotate the objective lens (1) in either direction, until you notice in which position the image is at its best. After that, rotate the ocular (2) also until the image is at its best. You may have to repeat the process again, until the image is sharp and clear. Once the clear image is obtained, you no longer need to adjust the ocular, just rotate the front objective lens to adjust the distance to the object you are viewing.

BRIGHTNESS ADJUSTMENT:

Your digital viewer is equipped with dual brightness control. An automatic brightness control sensor adjusts the image brightness according to the available ambient light. In addition a toggle brightness adjustment wheel (14) allows you to fine-tune the image brightness depending on the ambient light conditions. Please note that during daylight you will need to tone the

brightness down to avoid image flickering and to preserve the battery life. During nighttime you could increase the brightness all the way up, however when utilizing built-in or external IR illuminator, you may need to tone the brightness down a bit.

ELECTRONIC IMAGE MAGNIFICATION ZOOM:

Your unit is also equipped with electronic zoom function, which allows you to change image magnification from 6x to 30x. To increase the image magnification press the IMAGE button (11) on the + side and look into the ocular – you will see the image magnification increase. At the minimum level (1.00) the image magnification is 6x; at the maximum level (5.00) the image magnification is 30x. You can see the zoom level in the right lower corner of the image screen once you start pressing the IMAGE button on the + side. To decrease the image magnification, press the IMAGE button on the – side.

USING INFRARED ILLUMINATOR:

Your digital viewer is equipped with a built-in powerful Infrared illuminator light (10). This light operates in a spectrum, which is normally invisible to a human eye, however with the help of the CCD sensor, located inside the unit, you will see a beam of light when looking through the ocular lens. Since the CCD does not actively amplify the available light, you will need to utilize the IR illuminator often in the nighttime conditions.

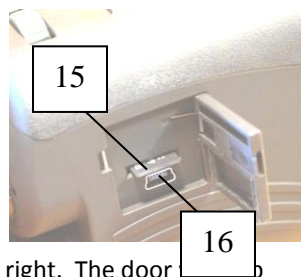
To turn the Infrared illuminator ON, press the Infrared illuminator button (13) momentarily – image will remain full color. To switch image to night vision green – press IR button again. To switch image to B&W press the IR button again. To turn the IR illuminator OFF press the same IR button again once. A red light indicator located in the back of the unit will light up indicating the IR illuminator is on and will disappear when the IR illuminator is off.

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.

Extended range IR illuminators are available (model LN-EIR-2, or LN-ELIR-2), which can be mounted into the accessory/tripod mount (4)

TAKING PICTURES AND RECORDING HD VIDEOS:

Your digital viewer has the ability to take 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. To change the SD-card, open the SD-card/USB compartment (7) by sliding the latch to the right. The door
open as you see on the image on the previous page. Remove the included



8GB card by pressing onto its end. It will pop out of its slot (15) as shown on the image. Gently remove the card and replace it with the new one by pressing it straight forward until it is securely locked in the slot. Close the compartment door and lock it by sliding the latch to the left.

To take a picture, focus the unit onto the object you are viewing and with a steady hand firmly press the PIC button (10) once. The display will give a countdown (2-1) and then image is taken and is automatically stored onto the SD card.

To record a video, focus the unit onto the object and press REC button (9) once. The system will start recording. Please note that the video is being recorded in Full-High Definition (1080p) and in the Widescreen format (16x9). To pause video recording press PIC button (10) once. To resume video recording press PIC button again. To stop recording, press Power button (12) once. During recording it is still necessary to re-adjust the focus if you wish to record different objects, located at different distances. Please be aware that actual video recording quality is significantly higher than what you will see through the viewfinder – to see recording in widescreen format please remove the micro-SD card and play it on your Blu-Ray player or computer.

VIEWING PICTURES AND RECORDED VIDEOS:

It is possible to view the images and videos directly on the unit's micro HD display. To do so, while the unit is operating press the Power button (12) briefly just once. You will be able to switch between images and videos by pressing IMAGE button (11) in either + or – direction. To play the recorded video, press PIC button (10) once. To stop playing video press PIC button again. To exit picture/video viewing mode and to come back to the active image mode, press Power button (12) briefly just once. Please note – if you press and hold Power button, your unit will shut down and would need to be reactivated again by pressing Power button once.

CHOOSING CORRECT ISO (SENSITIVITY) SETTING:

Your digital monocular comes with 5 user-selectable ISO (sensitivity) settings, plus an AUTO mode. All units come with AUTO mode as a default setting and in most conditions this mode is the best choice for viewing and recording. In certain conditions where extra sensitivity is desired (such as Sky Watching where small light objects need to be constantly seen) it is better to select one of the highest ISO settings (between 1600 and 6400) for constant sensitivity, which prevents any sudden bright light source to lower the overall system sensitivity. To choose the ISO setting, access the menu by long pressing the IR button (13) and selecting desired mode with IMAGE button (11) and confirming with IR button (13)

CONNECTING TO EXTERNAL VIDEO SOURCE:

You can connect your device to the TV/VCR/DVR via the RCA-type video cord (included with your device). Connect the small end of the Video cable to the

Video Output (5) and then connect to the TV/Recorder. . NOTE – if you live outside of the USA, you may need to switch the Video Output from NTSC to PAL by accessing the menu (Press IR Button for 2 seconds and when Menu appears select Video Format with Image button (11) and activate it with IR button (13). Switch between NTSC and PAL formats by pressing the Image Button and confirm your setting by pressing IR or REC button (depending on the software version).

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:
 - a) you may be turning the unit on in a dark area with the lens cover still on the unit
 - b) You may need to turn on the infrared light
3. Unable to obtain sharp and clear image:
 - a) you may need to repeat the process of rotating the ocular and objective lens several times until you get a good feel of it
 - b) You may be viewing an object that it too close – the minimum focusing distance is approximately 50cm or 1.6ft
4. I switch from active image to photo/video review and the unit shuts off:
 - a) You are pressing the Power button too long. You must only press the Power button once and immediately release it.
5. Image freezes during operation or during initial turn on:
 - a) Open at least one battery compartment and then re-activate the unit.
6. I'm trying to turn the IR illuminator on and instead I see the date/time menu:
 - a) You are holding the IR button for more than 1 sec. In order to turn the IR illuminator on, you must press the IR button once and immediately release it.

TECHNICAL SPECIFICATIONS:

CCD/CMOS Resolution / Sensitivity:	_____	1920x1080 / 0.002lux (night)
Still Image resolution	_____	2.1MP JPEG
Video resolution (signal)	_____	Full-HD 1080p AVI (NTSC / PAL)
Image Magnification	_____	6x-30x
Focusing Distance	_____	50cm (1.6ft) - ∞
Viewing Distance (IR complete darkness)	_____	250m (820ft)
Field Of View	_____	6°x4°
Memory	_____	Micro SD card (up to 128GB)
Power	_____	2 x 3V Lithium (CR123)
Operating Time	_____	2.5-3hrs
Dimensions	_____	170mm x 80mm x 63mm (6.7"x3.1"x2.5")
Weight	_____	400g (14 oz)
Warranty	_____	1yr