



4K ULTRAHD
MN4K20NV
INFRARED NIGHT VISION



MN4K20NV User Manual

About this Manual

Congratulations on purchasing the Minolta MN4K20NV 4K Ultra HD Camcorder! 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 camera.

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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

Camera Information

- Do not disassemble or attempt to service the camera yourself.
- Do not expose the camera to moisture, or extreme temperatures.
- Allow the camera to warm up when moving from cold to warm temperatures.
- Do not touch and put pressure on the camera 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 camera while you are walking, driving or riding a vehicle.
- Please handle the camera 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 camera before installing or removing the battery.
- Use only the provided batteries or type of battery and charger that came with your camera. 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 camera is used for an extended period of time, it is normal for the camera body to feel warm.
- Download all pictures and remove the battery from the camera if you are going to store the camera 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.
- Risk of explosion if battery is replaced by an incorrect type. Dispose of used

batteries according to the instructions.

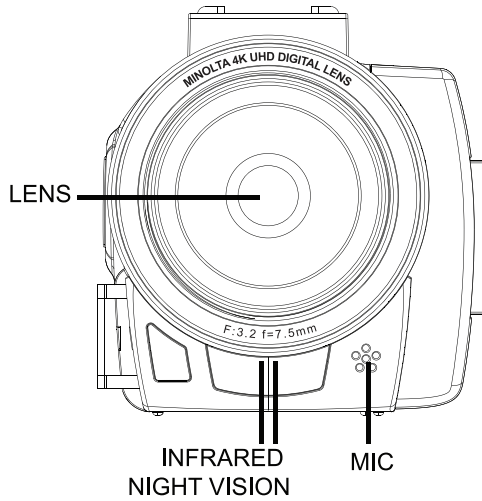
- Please keep the batteries out of the reach of children to prevent from swallowing batteries, which might cause poisoning.
- Once the battery's color changes or its shape is twisted, please stop using it.

USB adapter Information

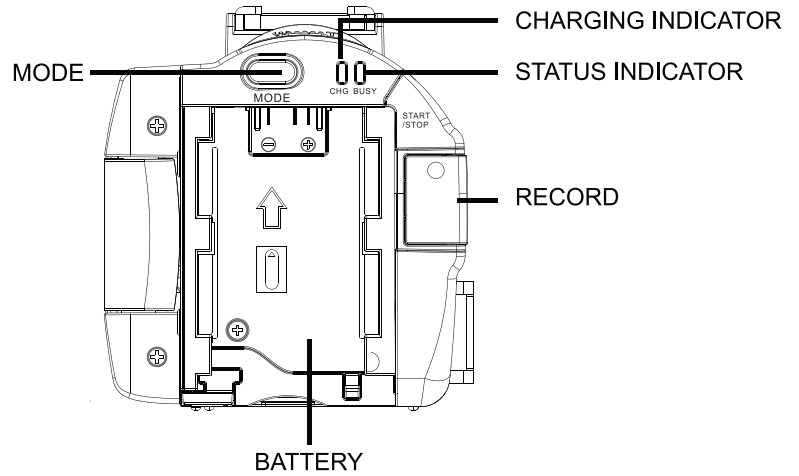
- Do not expose the adapter to high temperatures or moisture places. Otherwise, it may cause fire or electric shock.
- Do not attempt to repair, disassemble, change or transform the adapter.
- Avoid sudden changes in temperature, which may cause condensation on the adapter's internal surfaces. Please 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 camera.

1.1 Camcorder Interface

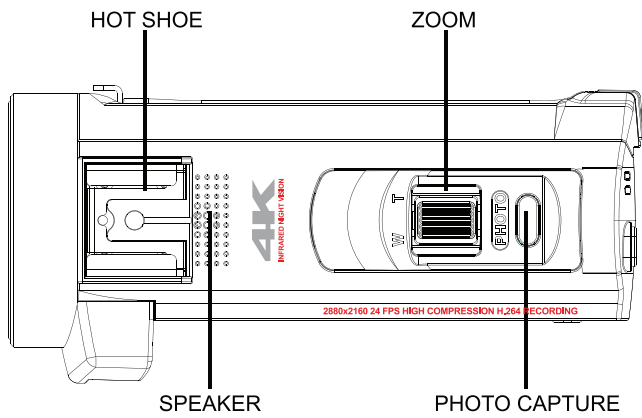
[front view]



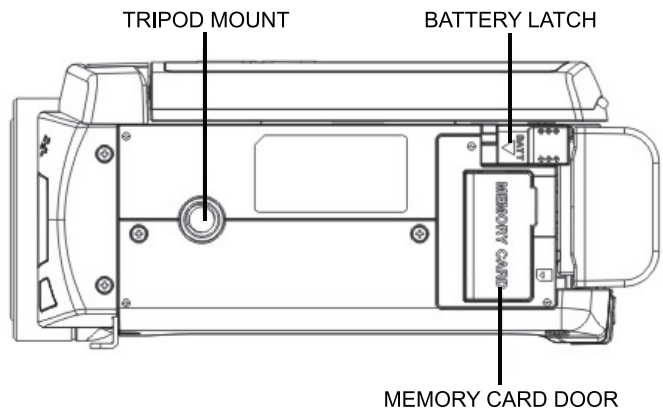
[rear view]



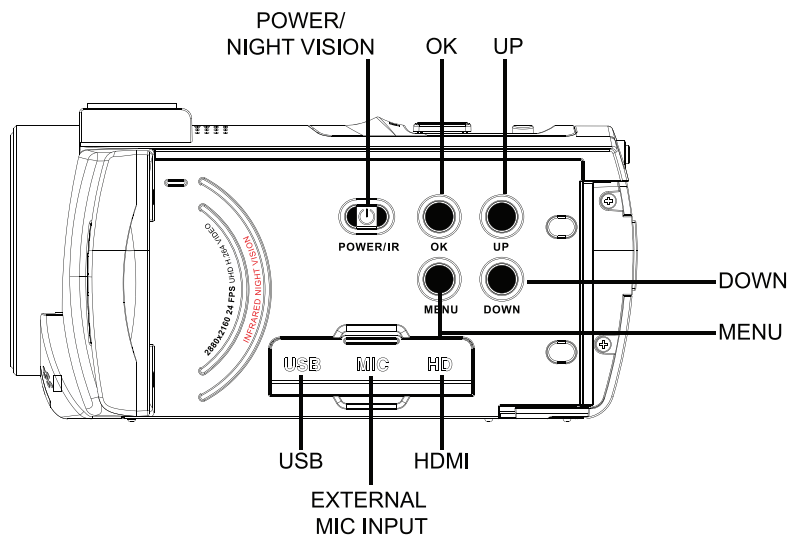
[top view]



[bottom view]



[side view]



1.2 Button Function Description

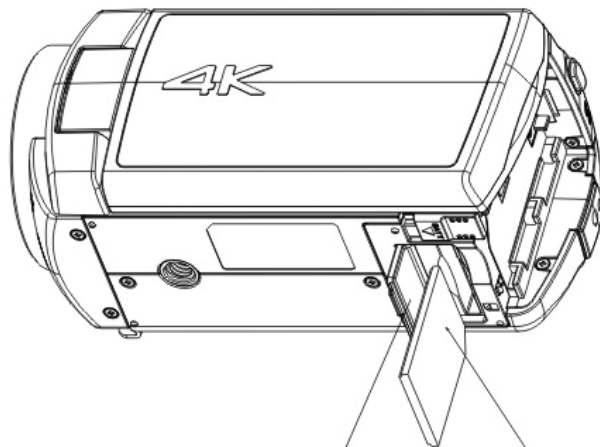
Function	Description
Power IR	Press for 3 seconds to power on or off. Tap once to enable or disable IR night vision.
Mode	Tap to cycle between Video, Photo and Playback modes.
Menu	Tap to access and exit all menus and submenus.
Up	Button used during menu navigation and playback use.
OK	OK button in menus. Tap to confirm a setting
Down	Button used during menu navigation and playback use.
Zoom	In Video or Photo: Press right to zoom-in. Press left to zoom-out. In menu: Press to select submenu In Playback: Press to view media gallery. In Video Playback: Press to adjust volume.
Photo Capture	In Photo: Tap to capture a photo. In Video: Tap to pause/play video.
Record	In Video: Tap to start/stop recording video. In Playback: Tap to play/stop video clip playback.
Infrared Night Vision	Infrared LED to aid with vision and recording in darkness.
Tripod Mount	Mount port for attaching to a tripod nut.
Memory Card Door	Door to cover storage slot for inserting a memory card.
Speaker	Built-in speaker output for playback of video files when audio recording is enabled.
Lens	Front capture device for all video and photo.
Hot Shoe	Attachment receptor for adding compatible accessories.

2. First Use

2.1 Inserting the Memory Card

Insert the included SD 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 SD memory card by following the steps below:

1. Open the memory card door on the bottom.
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. Flip the memory card door closed.
4. To remove the memory card, simply push in and the card will eject back out.



1. Open the SD card door (Toggle outside to open the SD card door, flip inside to close the SD card door)

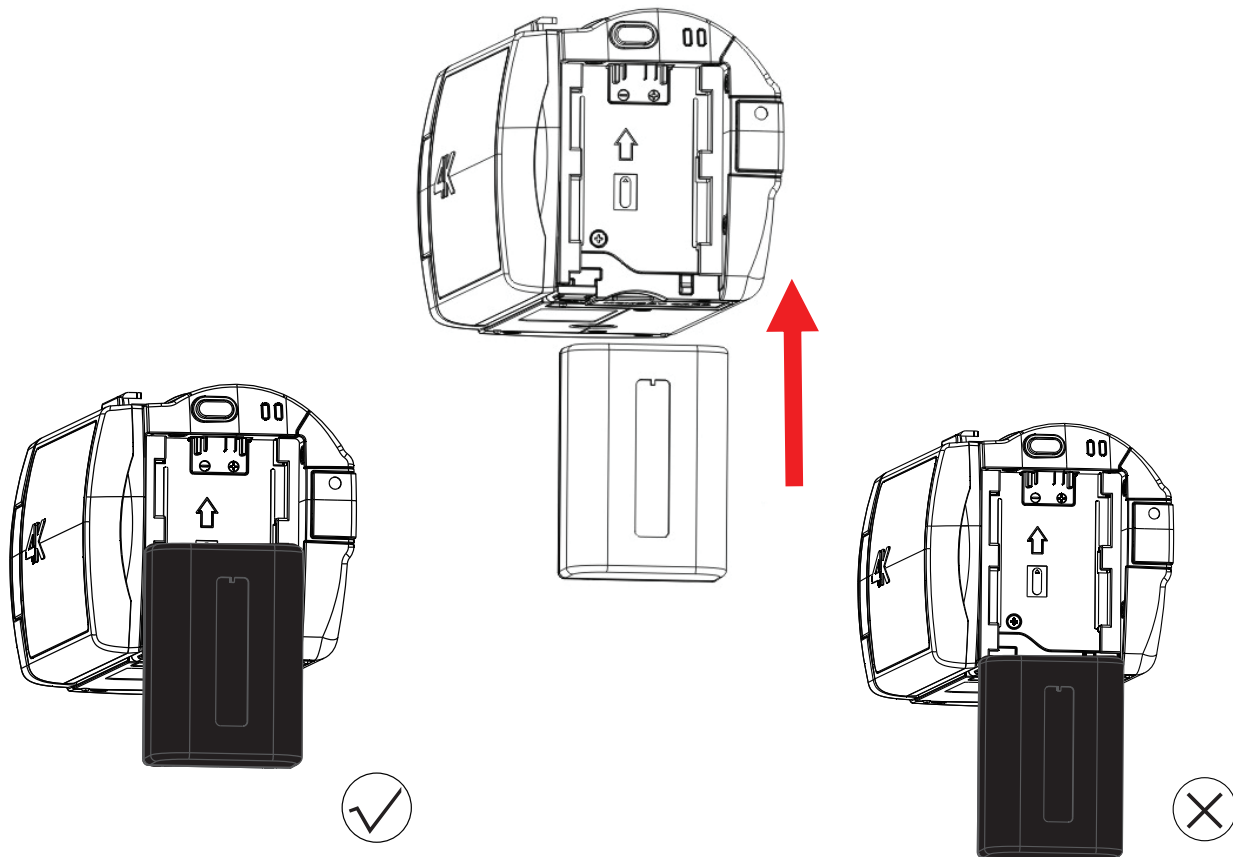
2. Insert the SD card as shown

NOTE:

- Please format the memory card before using the camcorder (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 with the metal contacts facing the back of the camcorder. Take special note of the ridges on the sides of the battery and the on the body of the camcorder. The battery can only be inserted one way. Mount the battery as shown and push in and up until it locks into place.



2.3 Charging the Battery

Connect your camcorder to the included AC adaptor with the USB cable provided for charging. Insert the small end of the USB plug into the camcorder's port, and the larger end into the included AC adaptor.

2.4 Powering the Camcorder On/Off

Hold the POWER button for 2 seconds to power the camcorder on. To power the camcorder off, press and hold the POWER button for a further 2 seconds.

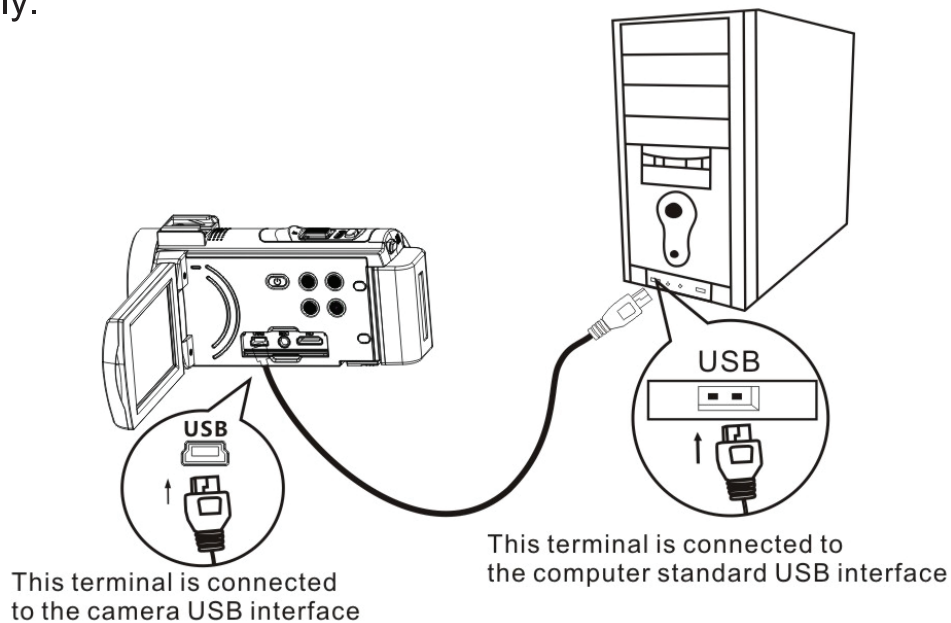
The camcorder will automatically power on and off when the screen is opened or closed. If the camcorder's battery is low, a "Low Power" message will display on the screen and it will automatically shut down within a few seconds to prevent memory corruption or loss.

2.5 Switching Modes

Press the MODE button to cycle between Video, Photo and Playback Modes. The corresponding mode will be displayed in the top left corner of the screen. You may also tap the corresponding mode icon in the top left corner of the touch screen to change modes.

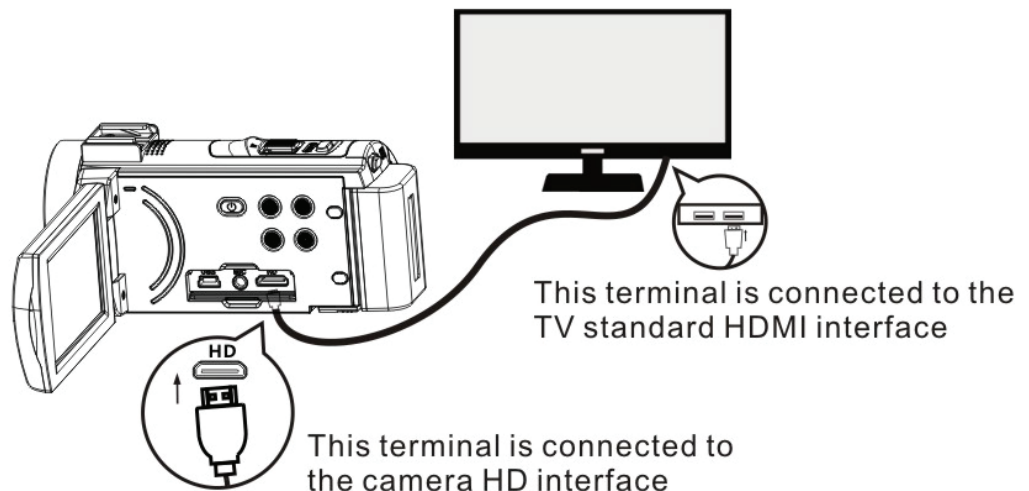
2.6 Connecting to a Computer

Your camcorder can connect to a computer to transfer photo and video files for viewing and editing, as shown below. Once connected and powered on, the camcorder's screen will enter "Mass Storage" mode automatically.



2.7 Connecting to a TV

The camcorder can also be connected to a TV. When connected, the camcorder screen will turn off and the camcorder will function normally. Use the TV as the camcorder monitor.



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:

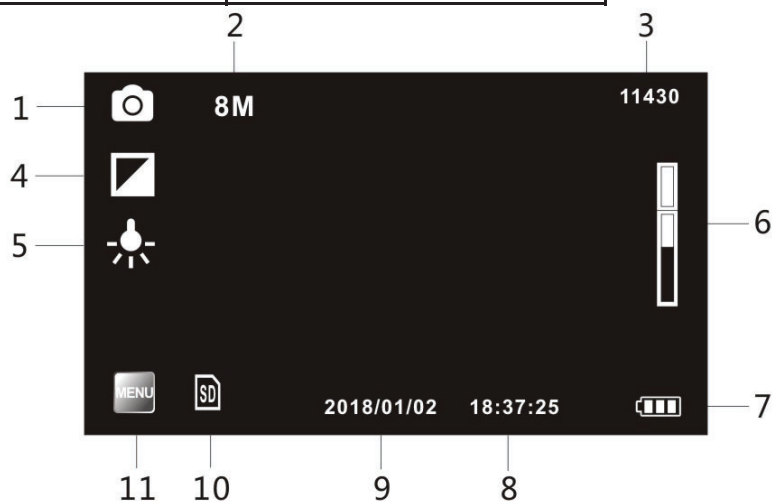
1) Video Mode	6) Zoom Level	11) Menu
2) Video Size (Resolution)	7) Battery Level	12) IR LED Light
3) Motion Detection	8) Current Time	13) Exposure Value
4) External Microphone	9) Current Date	14) Time-Lapse
5) Recording Time elapsed	10) Memory Card Inserted	



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) IR LED Light	9) Current Date
2) Photo Size (Resolution)	6) Zoom Level	10) Memory Card Inserted
3) Remaining Photo Space	7) Battery Level	11) Menu
4) Exposure Value	8) Current Time	



2.10 Using the Zoom Function

This camcorder has a digital zoom function. To operate the zoom function, slide the ZOOM button right to zoom in closer to the subject, and to the left to zoom away from the subject.

2.11 Using the IR Night Vision Mode

This camcorder 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, short-press the POWER/IR button once to enable the IR LED light. When the IR LED light is enabled, the IR LED light indicator in the middle left of the screen will display in white.

To disable the IR light, short-press the POWER/IR button again. You will notice that the IR light indicator on the screen is no longer showing.

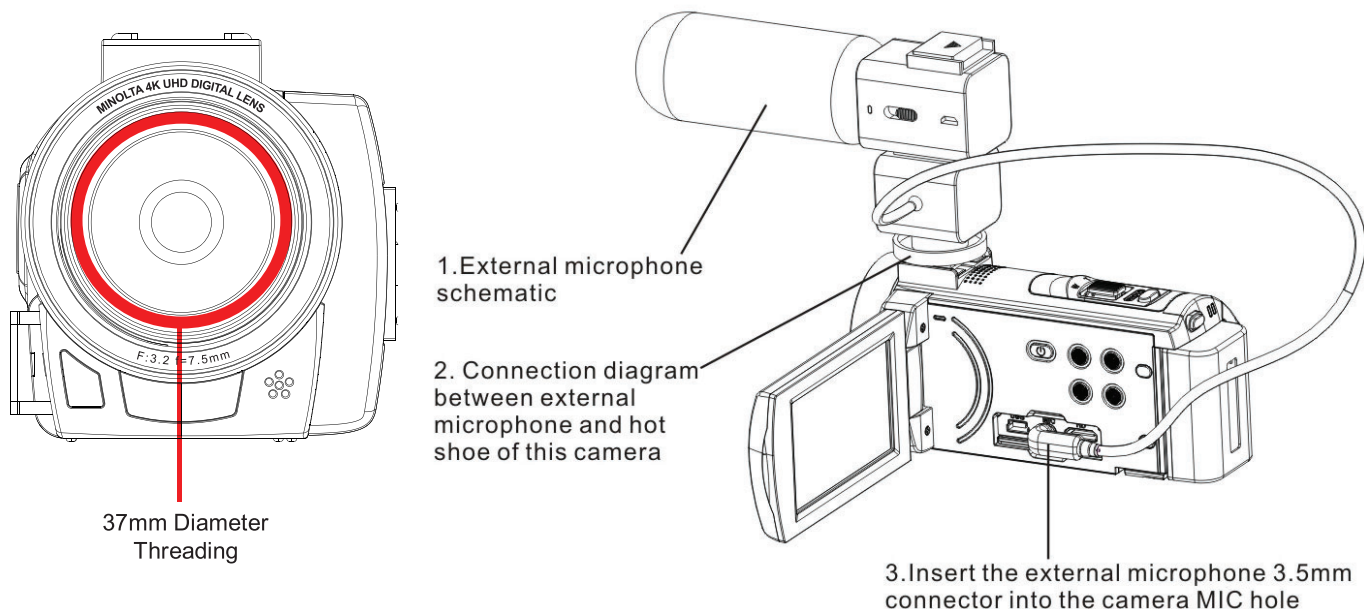
Note:

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.

2.12 Attaching External Accessories

This camcorder supports lens filters & attachments, external microphones and assistive lighting utilizing power from the hot-shoe mount. When attaching an external microphone, be sure to mount it to the hot-shoe mount and also insert the 3.5mm plug into the MIC port.



3. Using the Camcorder

3.1 Video Recording

Power the camcorder on and it will be ready to record clips right away. You may press the MODE button or press the icon in the top left hand corner of the touch screen to switch to another mode. A camcorder icon will appear in the top left hand corner of the screen when you are in Video mode.

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

3.1.1 Movie Size (Resolution)

Your camcorder has a number of preset resolutions and frames per second rates.

1. In Video Mode press the MENU button.
2. Select 'Movie Size' using the UP or DOWN buttons and press the OK button to enter the 'Movie Size' submenu.
3. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (4K 24fps, 2K 30fps, 1080P 60fps, 1080p 30fps, 720p 60fps, 720p 30fps). A higher resolution and faster frames per second rate will produce a higher quality and larger video file.

3.1.2 Loop Recording

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

1. In Video Mode press the MENU button.
2. Select 'Loop Recording' using the UP or DOWN buttons. Press the OK button to enter the 'Loop Recording' submenu.
3. Press the UP or DOWN buttons to select the required loop duration option (Off, 3 Minutes, 5 Minutes, 10 Minutes), and press the OK button to confirm your selected option.

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

3.1.3 Exposure

This function adjusts the frame brightness in your photograph.

1. In Video Mode press the MENU button.

2. Select '*Exposure*' using the UP or DOWN buttons and press the OK button to enter the '*Exposure*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected exposure mode (+3.0, +2.0, +1.0, 0.0, -1.0, -2.0, -3.0).

3.1.4 White Balance

White Balance changes the color of light in your pictures, making it seem warmer or cooler depending on how the light you're shooting in affects the frame.

1. In Video Mode press the MENU button.
2. Select '*White Balance*' using the UP or DOWN buttons and press the OK button to enter the '*White Balance*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected setting (Auto, Daylight, Cloudy, Tungsten, Fluorescent).

3.1.5 Time-Lapse

This feature allows you to capture long sequences of events in a much shorter time period.

1. In Video Mode press the MENU button.
2. Select '*Time-Lapse*' using the UP or DOWN buttons and press the OK button to enter the '*Time-Lapse*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected setting (Off, Interval of 1 Second, 5 Seconds, 10 Seconds, 30 Seconds, 1 Minute, 5 Minutes, 10 Minutes, 30 Minutes).

NOTE: By selecting '*10 Seconds*' the camera will capture a photo every 10 seconds and create a time-lapse video. To disable Time-Lapse recording, select '*Off*' in this submenu.

NOTE: Time-Lapse recording can only occur in 2K, 1080P and 720P resolutions.

3.1.6 Color Filter

This function sets the color filter effect of a video.

1. In Video Mode press the MENU button.
2. Select '*Color Filter*' using the UP or DOWN buttons and press the OK button to enter the '*Color Filter*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected filter (Color, Black & White, Sepia).

3.1.7 Metering

Metering mode refers to the way in which a camera determines the appropriate exposure (quantity of light reaching the camcorder lens). Spot metering will only base the exposure setting on a very small area of the scene. Center-Weighted metering will use the light from the center of the LCD and the Average setting measures the light at several points on the screen.

1. In Video Mode press the MENU button.
2. Select '*Metering*' using the UP or DOWN buttons and press the OK button to enter the '*Metering*' submenu.
3. Press the UP or DOWN buttons to select the required Metering option (Center-Weighted, Spot, Average), and press the OK button to confirm your selected option.

3.1.8 Motion Detection

Motion Detection is used for automatic recording when motion is detected.

1. In Video Mode press the MENU button.
2. Select '*Motion Detection*' using the UP or DOWN buttons and press the OK button to enter the '*Motion Detection*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected option (Off, On).
4. After the camcorder starts recording press the RECORD button to stop recording. This turns motion detection off. Follow the steps above again to enable it again.

3.1.9 Record Audio

This function allows you to enable or disable the microphone.

1. In Video Mode press the MENU button.
2. Select '*Record Audio*' using the UP or DOWN buttons and press the OK button to enter the '*Record Audio*' submenu.
3. Press the UP or DOWN buttons to select the required option (Off, On), and press the OK button to confirm your selected option.

3.1.10 Date and Time Stamp

This function adds a date/time stamp to your photographs.

1. In Video Mode press the MENU button.
2. Select '*Date and Time Stamp*' using the UP or DOWN buttons and press the OK button to enter the '*Date and Time Stamp*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the

OK button for your selected setting (Off, On). Page 18 explains how to set the time & date on your camcorder.

Note that once a date/time stamp is recorded onto a video clip, it cannot be removed.

Alternatively, your camcorder's menus can be navigated via the touch screen. Press the 'MENU' icon in the bottom left hand corner of the touch screen to change chosen settings.

3.2 Photo Shooting

Power the camcorder on and press the MODE button or press the icon in the top left hand corner of the touch screen to switch to Photo mode.

1. Line up your shot by looking at the LCD screen to see what is in the shot.
2. Hold the camera 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. A “Please Insert SD Card” message will be displayed on the screen if there is no SD card inserted in the camcorder’s memory card slot. A “Card Full” message will be shown on the screen when the SD card is full.
5. 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.

Alternatively, your camcorder’s menus can be navigated via the touch screen. Press the ‘MENU’ icon in the bottom left hand corner of the touch screen to change chosen settings.

3.2.1 Photo Size (Resolution)

This function sets the photo resolution. The higher the resolution, the greater the photo quality and the larger the file size of the photo.

1. In Photo Mode 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 select a resolution, and press the OK button to confirm the selected photo resolution (30MP, 24MP, 20MP, 16MP, 12MP, 8MP, 5MP).

3.2.2 Photo Stabilization

This function enables photo capture in high speed and low-light by electronically minimizing motion blur and reducing camera shake.

1. In Photo Mode press the MENU button.
2. *Select ‘Photo Stabilization’* using the UP or DOWN buttons and press the OK button to enter the *‘Photo Stabilization’* submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected option (Off, On).

3.2.3 Self-Timer

This function determines the time delay before a photograph is captured. This setting can be used by photographers to take photographs of themselves.

1. In Photo Mode press the MENU button.
2. Select '*Self Timer*' using the UP or DOWN buttons and press the OK button to enter the '*Self Timer*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected option (Off, 2 Seconds, 5 Seconds, 10 seconds).

3.2.4 Photo Burst

This function allows to you capture 5 consecutive photos with one click of the PHOTO button.

1. In Photo Mode press the MENU button.
2. Select '*Photo Burst*' using the UP or DOWN buttons and press the OK button to enter the '*Photo Burst*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected setting (Off, 5 Photos Per Shot).

3.2.5 Quality

The Photo Quality function determines the level of compression the camcorder uses when saving photos to a memory card.

1. In Photo Mode press the MENU button.
2. Select '*Quality*' using the UP or DOWN buttons and press the OK button to enter the '*Quality*' submenu.
3. Press the UP or DOWN buttons to select the required quality option (Fine, Normal, Economy), and press the OK button to confirm your selected image option. Fine uses the least amount of compression for saving, and as a result produces a higher photo quality.

3.2.5 Sharpness

This function adjusts the visible detail of a photograph.

1. In Photo Mode, press the MENU button.
2. Select '*Sharpness*' using the UP or DOWN buttons and press the OK button to enter the '*Sharpness*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm how sharp you would like your photograph to be (Strong, Normal, Soft).

3.2.6 White Balance

White Balance changes the color of light in your pictures, making it seem warmer or cooler depending on how the light you're shooting in affects the frame.

1. In Photo Mode press the MENU button.
2. Select '*White Balance*' using the UP or DOWN buttons and press the OK button to enter the '*White Balance*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected setting (Auto, Daylight, Cloudy, Tungsten, Fluorescent).

3.2.7 Color Filter

This function sets the color filter effect of a photograph.

1. In Photo Mode press the MENU button.
2. Select '*Color Filter*' using the UP or DOWN buttons and press the OK button to enter the '*Color Filter*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected filter (Color, Black & White, Sepia).

3.2.8 ISO

This function adjusts the light sensitivity of your photograph.

1. In Photo Mode press the MENU button.
2. Select '*ISO*' using the UP or DOWN buttons and press the OK button to enter the '*ISO*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected ISO (Auto, 100, 200, 400).

3.2.9 Exposure

This function adjusts the frame brightness of your photograph.

1. In Photo Mode press the MENU button.
2. Select '*Exposure*' using the UP or DOWN buttons and press the OK button to enter the '*Exposure*' submenu.
3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected exposure mode (+3.0, +2.0, +1.0, 0.0, -1.0, -2.0, -3.0).

3.2.10 Face Detection

This function allows you to set your camera to detect faces in a scene and automatically adjust your camera's settings for the most optimal picture.

1. In Photo Mode press the MENU button.
2. Select '*Face Detection*' using the UP or DOWN buttons and press the

OK button to enter the '*Face Detection*' submenu.

3. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected option (Off, On).

3.2.11 Date and Time Stamp

This function adds a date/time stamp to your photographs.

1. In Photo Mode press the MENU button.
2. Select '*Date and Time Stamp*' using the UP or DOWN buttons and press the OK button to enter the '*Date and Time Stamp*' submenu.
3. Press the UP or DOWN buttons to navigate the menu and the OK button for your selected setting (Off, Date, Date and Time). Page 18 explains how to set the time & date on your camcorder.

Note that once a date/time stamp is captured on a photograph, it cannot be removed.

3.3 Setup Menu

Basic settings can be changed in the Setup menu. These include date & time, language and sound options.

1. Power the camera on and press the MENU button.
2. Push the ZOOM button Right to switch to Setup menu.

3.3.1 IR Mode

This menu allows you to enable or disable the IR LED Night Vision.

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. Once in the Setup Menu use the UP or DOWN buttons to select '*IR Mode*' and press the OK button to enter the '*IR Mode*' submenu.
3. Press the UP or DOWN buttons to select On or Off. Then press the OK button to confirm your selection.

3.3.2 Date and Time

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

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select '*Date and Time*' and press the OK button to enter the '*Date and Time*' submenu.
3. Push the ZOOM buttons left or right to highlight which field of numbers you want to change.
4. Once highlighted on your desired field, press the UP or DOWN buttons to cycle through numbers.
5. Once completed with all of the fields, press the OK button to confirm the changes.

3.3.3 Auto Power Off

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

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to navigate and select '*Auto Power Off*' Press the OK button to enter the submenu.
3. Press the UP or DOWN buttons to navigate the menu and then press the OK button to confirm your selected setting (Off, 3 Minutes, 5 Minutes, 10 Minutes).

3.3.4 Beep Sound

This function allows you to enable or disable any system sound prompts.

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select '*Beep Sound*' and press the OK button to enter the '*Beep Sound*' submenu.
3. Press the UP or DOWN buttons to select On or Off. Then press the OK button to confirm your selection.

3.3.5 Language

Set the camcorder's interface language in the language submenu.

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select '*Language*' and press the OK button to enter the '*Language*' submenu.
3. Press the UP or DOWN buttons to select your desired language. Then press the OK button to confirm your selection.

3.3.6 Power Frequency

This function sets the frequency of the camcorder from 50Hz to 60Hz.

Please check the frequency of your location and set accordingly.

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select '*Power Frequency*' and press the OK button to enter the '*Power Frequency*' submenu.
3. Press the UP or DOWN buttons to select your desired frequency. Then press the OK button to confirm your selection (50Hz, 60Hz). The default frequency for the United States is 60Hz.

3.3.7 Erase and Format Memory Card

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

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select '*Erase and Format Memory Card*' and press the OK button to enter the submenu.
3. Press the UP or DOWN buttons to select your desired selection.
4. Press the OK button for your selected setting (Cancel, OK).

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

3.3.8 Default Setting (Reset All Options)

Factory default settings can be restored within 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.

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select 'Default Settings' and press the OK button to enter the submenu.
3. Press the UP or DOWN buttons to select your desired selection.
4. Press the OK button for your selected setting (Cancel, OK).

NOTE: This cannot be undone.

3.3.9 Version

View the firmware version of your camcorder's software.

1. In any mode, press the menu button and then press the Zoom button right to enter the Setup menu.
2. In Setup Mode use the UP or DOWN buttons to select 'Version' and press the OK button to enter the submenu.
3. The software version will be displayed on the screen. Press the OK button to return to the setup menu.

Alternatively, your camcorder's menus can be navigated via the touch screen. Press the 'MENU' icon in the bottom left hand corner of the screen to change chosen settings.

3.4 Playback Mode

Videos and photos captured on your camcorder can be easily played back.

Power the camcorder on and press the MODE button to switch to Playback Mode. A 'Video' or **Play** icon will now appear in the top left hand corner of the screen. Photos and videos captured on the camcorder can be view and played back.

1. Press the UP, DOWN or ZOOM buttons to cycle through the captured videos and photos stored on the memory card.
2. To enter into a video or photo, press the OK button.
3. When viewing a photo push the ZOOM button to the right and it will zoom in on the picture on the screen. Use the touch screen to navigate while zoomed in.
4. Tap the right side of the screen to move right, the left to move left, the top to move up and the bottom to move down.
5. Push the ZOOM button to the left to see 9 images on the screen at once. Use the UP or DOWN buttons to change the page, or use the ZOOM button to cycle through the media. Press the OK button or tap the picture on the screen to view the selected media.

You can also delete, protect and play media back in slideshow format. In Playback Mode, the following operations are an option:

3.4.1 Delete

This function is used to delete photos and videos. Photos and videos can be deleted singly or all at once.

1. In Playback Mode press the MENU button, and use the UP or DOWN buttons to select '*Delete*'. Press the OK button to enter the '*Delete*' submenu.
2. Press the UP or DOWN buttons to navigate the menu, and press the OK button for your selected setting (Delete Current, Delete All).
3. Press the MENU button to exit the menu without deleting any pictures or videos.

3.4.2 Protect

This function protects the photo/video file. The file will be protected from being deleted accidentally. Files must be unprotected to be deleted.

1. In Playback Mode press the MENU button, and use the UP or DOWN buttons to select '*Protect*' and press the OK button to enter the '*Protect*' submenu.

2. Press the UP or DOWN buttons to navigate the menu and press the OK button to confirm your selected setting (Lock Current, Unlock Current, Lock All, Unlock All).
3. Press the MENU button to exit the menu without protecting any pictures or videos.

3.4.3 Slideshow

Photographs can be viewed as a slideshow on the camcorder.

1. In Playback Mode press the MENU, and use the UP or DOWN buttons to select 'Slide Show'. Press the OK button to enter the 'Slide Show' submenu.
2. Press the UP or DOWN buttons to navigate the menu, and press the OK button to confirm your selected setting (2 Seconds, 5 Seconds, 8 Seconds), this will start the slide show.
3. To pause and restart the slide show press the PHOTO button, to cancel the slide show press the RECORD button.
4. To exit the 'Slide Show' submenu, press the MENU button.

3.4.4 Video Playback

Videos can be played back and viewed on your camcorder.

1. In Playback Mode, press the UP or DOWN buttons to select the video file for playback.
2. Press the PHOTO button to start playing the video. Press the PHOTO button a second time to pause the video.
3. During playback, push the ZOOM button (left or right) to increase and decrease the playback volume.
4. Your camera can support touch screen navigation in Playback Mode.
 - Tapping the "▶" icon will Play the video file.
 - Tapping the "■" icon will Stop the video file.
 - Tapping the "||" icon will Pause the video file.
 - Tapping the "▶▶" icon will go to the next image, if a video is already playing it will fast forward. Tap the icon multiple times for different fast forward speeds.
 - Tapping the "◀◀" icon will go to the previous image, if a video I already playing it will rewind. Tap the icon multiple times for different rewind speeds.

Alternatively, your camcorder's menus can be navigated via the touch screen. Press the 'MENU' icon in the bottom left hand corner of the screen to change chosen setting.

4.1 Technical Specifications

Model Number	Minolta MN4K20NV
Lens	Fixed Focus • f=7.5mm • F/3.2 • 37mm Front Threading for Lens Accessory Attachments
Zoom	16X Digital Zoom; W/T
Image Sensor	8MP Sony 179 CMOS
Shutter Speed	1/60 ~ 1/30 sec
Shutter	Electronic • Anti-Shake Image Stabilization
Pixels (photo)	JPEG: 30 MP • 24 MP • 20 MP • 16 MP • 12 MP • 8 MP • 5 MP
Pixels (video)	MP4: 4K24fps • 2K30fps • 1080p60fps • 1080p30fps • 720p60fps • 720p30fps
ISO Sensitivity	Auto • 100 • 200 • 400
LCD Monitor	3.0 Inch IPS 262k High-resolution Touch Screen LCD
Assistive Light	Infrared LED (for shooting in dark scenery)
Power Saving Mode	OFF • 3 Minutes • 5 Minutes • 10 Minutes
White Balance Control	Auto • Daylight • Cloudy • Tungsten • Fluorescent
Color Filters	Color • Black & White • Sepia
Special Features	Time-Lapse (2k Resolution Only) • Loop Recording • Motion Detection • Photo Burst
Recording Media	SD • SDHC • SDXC; Maximum: 128GB
I/O Ports	5-pin Mini USB, USB 2.0 (high speed) • Mini HDMI C Type • Microphone (built-in MIC) • Speaker • Microphone Input (3.5mm) • Hot Shoe
Power	NP-180; 3.7v, 1800mAh, 6.6Wh
Dimensions	5.12 x 2.18 x 2.40 in. • 10.4 oz.



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