

JVC

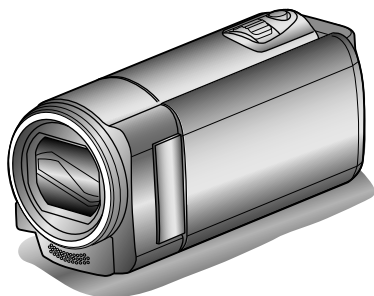
LYT2288-001A-M

EN

CAMCORDER

GZ-HM30AA

Basic User Guide



Everio

Dear Customers

Thank you for purchasing this JVC product.

Before use, please read the Safety Precautions and Cautions on p. 2 and p. 21 to ensure safe use of this product.

**Detailed User Guide**

A “Basic User Guide” (this manual) and a “Detailed User Guide” are available for this product.

For more details on operating this product, please refer to the “Detailed User Guide” at the following website.

■ <http://manual.jvc.co.jp/index.html/>

■ You can also access the website from the supplied CD-ROM.

Getting Started

Recording

Playback

Copying

Further Information



Safety Precautions

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTIONS:

- If you notice smoke or a peculiar smell coming from this unit or AC Adapter, shut it down and unplug it immediately. Continue using the unit or AC Adapter under these conditions could lead to fire or electric shock. Contact your JVC dealer. Do not attempt to repair the malfunction yourself.
- To prevent shock, do not open the cabinet. No user serviceable parts inside. Refer servicing to qualified personnel.
- When you are not using the AC adapter for a long period of time, it is recommended that you disconnect the power cord from AC outlet.
- In certain areas, use the conversion plug depending on the type of your AC wall outlet.

NOTES:

- The rating plate and safety caution are on the bottom and/or the back of the main unit.
- The serial number plate is on the battery pack mount.
- The rating information and safety caution of the AC adapter are on its upper and lower sides.

WARNING:

The battery pack, this unit with battery installed, and the remote control with battery installed should not be exposed to excessive heat such as direct sunlight, fire or the like.

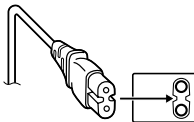
CAUTION:

The mains plug shall remain readily operable.

- Remove the mains plug immediately if this unit functions abnormally.

CAUTION:

To avoid electric shock or damage to the unit, first firmly insert the small end of the power cord into the AC Adapter until it is no longer wobbly, and then plug the larger end of the power cord into an AC outlet.



Caution on Replaceable lithium battery

The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C or incinerate.

Replace battery with Panasonic, Sanyo, Sony or Maxell CR2025.

Danger of explosion or Risk of fire if the battery is incorrectly replaced.

- Dispose of used battery promptly.
- Keep away from children.
- Do not disassemble and do not dispose of in fire.

When the equipment is installed in a cabinet or on a shelf, make sure that it has sufficient space on all sides to allow for ventilation (10 cm or more on both sides, on top and at the rear). Do not block the ventilation holes.

(If the ventilation holes are blocked by a newspaper, or cloth etc. the heat may not be able to get out.)

No naked flame sources, such as lighted candles, should be placed on the apparatus.

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

The apparatus shall not be exposed to dripping or splashing.

Do not use this equipment in a bathroom or places with water.

Also do not place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups etc.) on top of this unit. (If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)

Do not point the lens directly into the sun. This can cause eye injuries, as well as lead to the malfunctioning of internal circuitry. There is also a risk of fire or electric shock.

CAUTION!

The following notes concern possible physical damage to this unit and to the user. Carrying or holding this unit by the LCD monitor can result in dropping the unit, or in a malfunction. Do not use a tripod on unsteady or unlevel surfaces. It could tip over, causing serious damage to the unit.

CAUTION!

Connecting cables (Audio/Video, etc.) to this unit and leaving it on top of the TV is not recommended, as tripping on the cables will cause the unit to fall, resulting in damage.



If this symbol is shown, it is only valid in the European Union.

Remember that this unit is intended for private consumer use only.

Any commercial use without proper permission is prohibited. (Even if you record an event such as a show, performance or exhibition for personal enjoyment, it is strongly recommended that you obtain permission beforehand.)

Trademarks

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x.v.Colour

HDMI
HIGH DEFINITION MULTIMEDIA INTERFACE

Make a backup of important recorded data

JVC will not be responsible for any lost data. It is recommended to copy your important recorded data to a disc or other recording media for storage.

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Detailed User Guide

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Verifying the Accessories

AC Adapter
AC-V10M *1



Power Cord *1



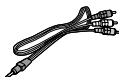
Battery Pack
BN-VG107E



USB Cable
(Type A - Mini Type B)



AV Cable



CD-ROM *2



Basic User Guide
(this manual)

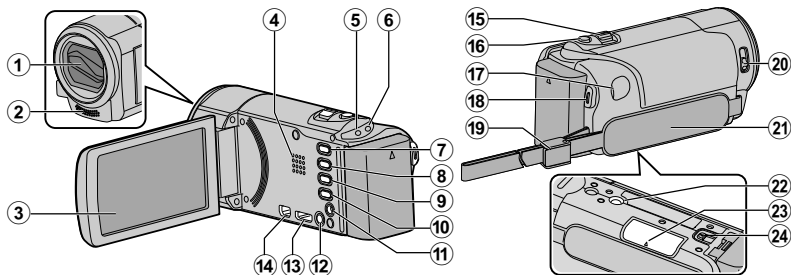





- SD cards are sold separately. For details on the types of cards that can be used on this unit, refer to p. 8.

*1 When using the AC adapter overseas, please prepare a commercially available converter plug for the country or region of visit.

*2 To use the CD-ROM, refer to the “Installing the Provided Software” section in the “Detailed User Guide”.

Names of Parts and Functions

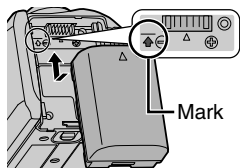


- ① Lens Cover
- ② Monaural Microphone
- ③ LCD Monitor
Turns the power on/off by opening and closing.
- ④ Speaker
- ⑤ ACCESS (Access) Lamp
Lights up/blinks during recording or playback.
- ⑥ POWER/CHARGE (Power/Charge) Lamp (p. 6)
- ⑦  (Play/Record) Button
Switches between recording and playback modes.
- ⑧ UP/< Button
UP : Scrolls/moves cursor on the icons upward
< : Reverse search
- ⑨ DOWN/> Button
DOWN : Scrolls/moves cursor on the icons downward
> : Forward search
- ⑩ OK/INFO Button
Confirms the selection. / Displays information as follows.
Recording : Displays the remaining time and battery power.
Playback : Displays file information such as recording date.
- ⑪ AV Connector (p. 15, 16)
- ⑫ MENU Button (p. 17)
- ⑬ HDMI Mini Connector (p. 14)
- ⑭ USB Connector
- ⑮ Zoom/Volume Lever / Index  (p. 12, 13)
- ⑯ i.AUTO (Intelligent Auto) Button (p. 12)
- ⑰ DC Connector (p. 6)
- ⑱ START/STOP Button (Video Recording) (p. 12) /  (Play/Pause) Button (Video Playback) (p. 13)
- ⑲ Strap Lock (p. 7)
- ⑳ Lens Cover Switch (p. 12)
- ㉑ Grip Belt (p. 7)
- ㉒ Tripod Mounting Hole
- ㉓ SD Card Slot (p. 8)
- ㉔ Battery Release Lever (p. 6)

Charging the Battery Pack

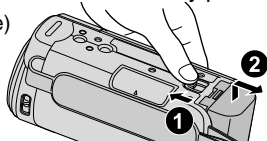
1 Attach the battery pack.

- * The battery pack is not charged at the time of purchase.

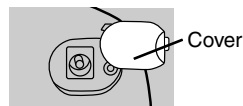


- Align the top of the battery with the mark on this unit, and slide in until the battery clicks into place.

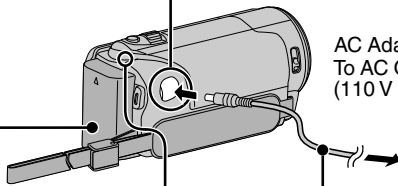
- To detach the battery pack (Base)



2 Connect the DC connector.



AC Adapter
To AC Outlet
(110 V to 240 V)



3 Plug in the power. Charging Lamp



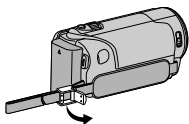
Charging in progress:
Blinks
Charging finished:
Goes out

CAUTION

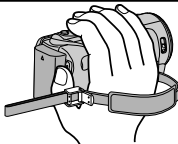
Be sure to use JVC battery packs.

- If you use any other battery packs besides JVC battery packs, safety and performance cannot be guaranteed.
- Charging time: Approx. 1 h 50 m (using supplied battery pack)
- * The charging time is when the unit is used at 25°C. If the battery pack is charged outside the room temperature range of 10°C to 35°C, charging may take a longer time or it may not start. The recordable and playable time may also be shortened under some usage conditions such as at low temperature.
- Charging is also possible with a USB cable. (Refer to Detailed User Guide.)

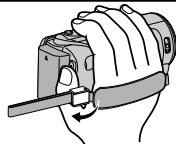
Grip Adjustment



- ① Open the lever on the strap lock



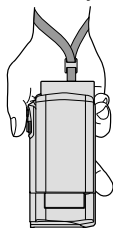
- ② Adjust the length of the belt



- ③ Close the lever

Using as a Hand Strap

Adjust the length of the belt and loop it around your wrist.



Video Quality

This unit can perform recording in both high and standard definition.

By default, it is set to high definition (LS).

■ To change the setting

- ① Press MENU.
- ② Press UP/< or DOWN/> to select "VIDEO QUALITY" and press OK/INFO.
- ③ Press UP/< or DOWN/> to select the video quality.
- ④ Press OK/INFO. (Setting complete)

High Definition	LS (16:9)		Higher video quality ↕ More recording time
	LE (16:9)		
Standard Definition	SSW (16:9)	SS (4:3)	
	SEW (16:9)	SE (4:3)	

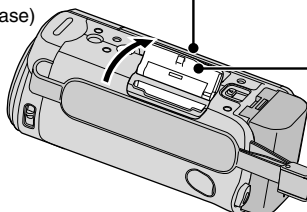
* For the approximate video recording time, refer to p. 18.

Inserting an SD Card

Insert a commercially available SD card before recording.

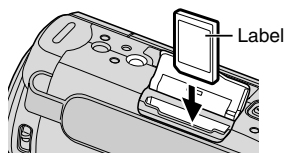
1 Close the LCD monitor.

(Base)



2 Open the cover.

3 Insert an SD card.

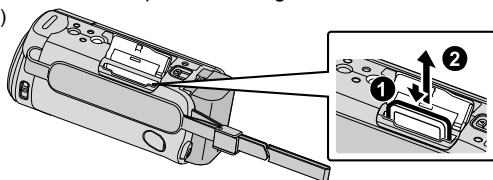


- * Turn off the power of this unit before inserting or removing a card.
- * When the LCD monitor is closed, the unit turns off.

■ To remove the card


Push the card inward once, then pull it out straight.

(Base)



NOTE

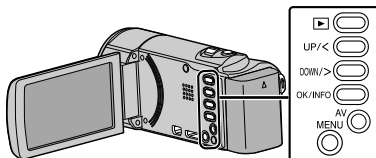
Operations are confirmed on the following SD cards.

Manufacturer	Panasonic, TOSHIBA, SanDisk, ATP, Eye-Fi*
Video 	Class 4 or higher compatible SDHC card (4 GB to 32 GB) / Class 4 or higher compatible SDXC card (Max. 64 GB)
Eye-Fi	Eye-Fi Connect X2 / Eye-Fi Explore X2 / Eye-Fi Pro X2

*Only the specified models may be used. Refer to the Detailed User Guide for details.

- Using SD cards (including SDHC/SDXC cards) other than those specified above may result in recording failure or data loss.
- To protect the data, do not touch the terminals of the SD card.
- Eye-Fi manufactures SD memory cards with wireless LAN function.

To select/move cursor towards up/left or down/right, press the button UP/< or DOWN/>.

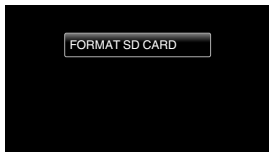


■ To use SD cards that have been used on other devices

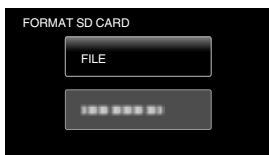
Format (initialize) the card using "FORMAT SD CARD" from media settings.

All data on the card will be deleted when it is formatted. Copy all files on the card to a computer before formatting.

- ① Press MENU.
- ② Select "MEDIA SETTINGS" and press OK.
- ③ Select "FORMAT SD CARD" and press OK.



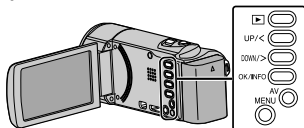
- ④ Select "FILE" and press OK.



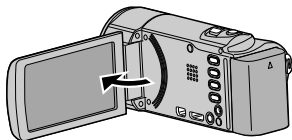
- ⑤ Select "YES" and press OK.
- ⑥ After formatting, press OK.

Clock Setting

To select/move cursor towards up/left or down/right, press the button UP/< or DOWN/>.



1 Open the LCD monitor.

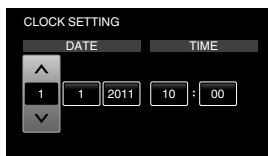


- The unit turns on. When the LCD monitor is closed, the unit turns off.

2 Select "YES" and press OK when "SET DATE/TIME!" is displayed.



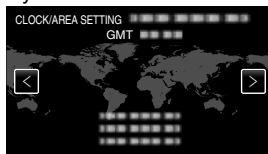
3 Set the date and time.



- Press UP/< or DOWN/> to adjust the setting value and press OK to confirm it. The cursor moves to the next item.
- Repeat this step to input the year, month, day, hour, and minute.

4 Press UP/< or DOWN/> to select the region where you live and press OK.

- The city name and time difference are displayed.

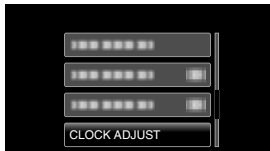


To return to the previous screen
Press MENU.

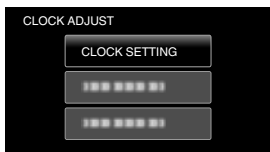
To reset the clock

Set the clock with "CLOCK ADJUST" from the menu.

- 1 Press MENU.
- 2 Select "CLOCK ADJUST" and press OK.



- 3 Select "CLOCK SETTING" and press OK.

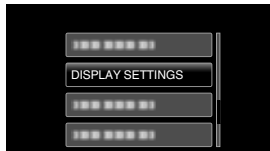


- The subsequent setting operations are the same as steps 3 - 4 on the previous page.

To change the display language

The language on the display can be changed.

- 1 Press MENU.
- 2 Select "DISPLAY SETTINGS" and press OK.



- 3 Select "LANGUAGE" and press OK.



- 4 Select the desired language and press OK.

NOTE

- "SET DATE/TIME!" is displayed when you turn on this unit after it has not been used for a prolonged period.
Charge this unit for more than 24 hours before setting the clock.


Video Recording

You can record without worrying about the setting details by using the Intelligent Auto mode. Settings such as exposure and focus will be adjusted automatically to suit the shooting conditions.

* In case of specific shooting scenes such as backlight (A), night view (M), person (P) etc., its icon is displayed on the screen.


Before recording an important scene, it is recommended to conduct a trial recording.

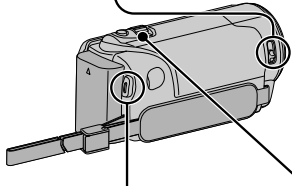
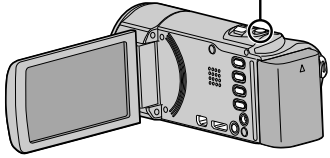
1 Open the lens cover.



2 Check if the recording mode is **i.A.** Intelligent Auto.


- If the mode is **M** Manual, press the **i.AUTO** button to switch.
- The mode changes between Intelligent Auto and Manual with every press.




3 Start recording.

- Press again to stop.





START
/STOP

Zooming



W VOL+ T






(Wide angle)
(Telephoto)

* Zoom ratio setting depends on the setting of "VIDEO QUALITY". (P.23)

■ Indications during video recording

<p>Image Stabilizer</p> <p>Video Quality</p> <p>Scene Counter</p>		<p>Recording Media</p> <p>Battery Indicator</p> <p>● II : Record-Standby</p> <p>● REC : Recording in Progress</p> <p>Remaining Recording Time</p>
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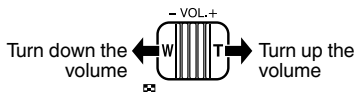
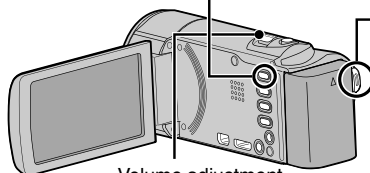
NOTE

- The estimated recording time of the supplied battery pack is approximately 40 minutes. (p. 18)
- Do not remove the battery pack, AC adapter, or SD card when the access lamp is lighted. The recorded data may become unreadable.

Playing Back/Deleting Files on this Unit

Select and play back the recorded videos from an index screen (thumbnail display).

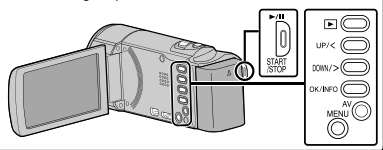
1 Select the playback mode.



2 Select the desired video and press .



- To select/move cursor towards up/left or down/right, press the button UP/< or DOWN/>.



- Press again to return to the recording mode.
- Videos recorded in high definition and standard definition are displayed on the index screen separately. Set "VIDEO QUALITY" in the recording menu to "LS" or "LE" to view the videos recorded in high definition, or to "SSW", "SS", "SEW", or "SE" to view the videos recorded in standard definition, before selecting the playback mode. (p. 7)

■ To delete selected files from the index screen

- Press MENU, select "DELETE" and press OK.
- Select "FILE SELECT" and press OK.
- Press UP/< or DOWN/> to select files and press OK.
- Press MENU, select "EXECUTE" and press OK to confirm deletion.
- After deleting is complete, press OK.

■ Usable operation buttons/levers during playback

	During video playback	During video pause
	Pause	Playback
Zoom	-	Stop (returns to thumbnail display)
Zoom T / Vol.+	Increases volume level	-
Zoom W / Vol.-	Decreases volume level	-
UP/<	Reverse search	Frame-by-frame playback in reverse direction
DOWN/>	Forward search	Frame-by-frame playback in forward direction

Playing Back on TV

1 Connect to a TV.

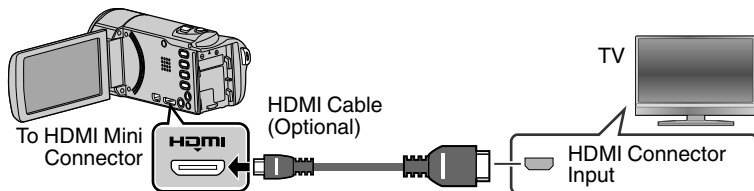
* Refer also to the instruction manual of the TV in use.

- Turn off the power.

■ Playing back in HD quality

If you are using an HDTV, you can play back in HD quality by connecting to the HDMI connector.

Connecting to the HDMI connector



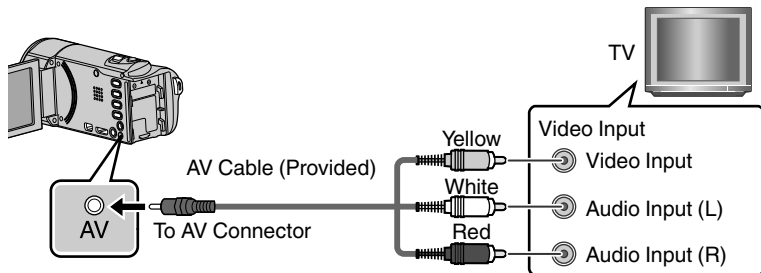
NOTE

- For questions about the TV or method of connection, contact your TV's manufacturer.
- Use a High Speed HDMI Cable (category 2 cable) as the HDMI mini cable.

■ Playing back in standard quality

If you are using a conventional TV, you can play back in standard quality by connecting to the AV connector.

Connecting to the AV connector



2 Connect the AC adapter.

- This unit powers on automatically when the AC adapter is connected.

3 Select the TV input switch.

4 Play back a file. (p. 13)

■ To play back with date/time display

Set "DISPLAY ON TV" in the "CONNECTION SETTINGS" menu to "ON".

Set "ON-SCREEN DISPLAY" in the playback menu to "ON".

■ When images look unnatural on the TV

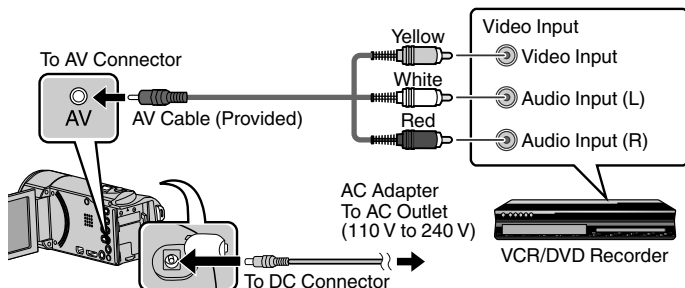
Images do not appear on the TV properly.	<ul style="list-style-type: none"> • Disconnect the cable and connect again. • Turn off and on this unit again.
Images are projected vertically on the TV.	<ul style="list-style-type: none"> • Set "VIDEO OUTPUT" in the "CONNECTION SETTINGS" menu to "4:3".
Images are projected horizontally on the TV.	<ul style="list-style-type: none"> • Adjust the TV's screen accordingly.
The color of images looks strange.	<ul style="list-style-type: none"> • When the video was recorded with "x.v.Color" set to "ON", change the setting as desired on TV. • Adjust the TV's screen accordingly.

Dubbing Files by Connecting to a DVD Recorder or VCR

You can dub videos in standard quality by connecting to a DVD recorder or VCR. Refer also to the instruction manuals of the TV, DVD recorder, VCR, etc.

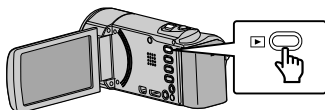
1 Connect to a VCR/DVD recorder.

- Turn off the power.



- This unit powers on automatically when the AC adapter is connected.

2 Press (Play/Record) to select the playback mode.



3 Prepare to record.

Preparation on TV and VCR/DVD recorder

- Switch to a compatible external input.
- Insert a DVD-R or video tape.

Preparation on this unit

- Set "VIDEO OUTPUT" in the "CONNECTION SETTINGS" menu to the aspect ratio ("4:3" or "16:9") of the connecting TV.
- To include the date during dubbing, set "DISPLAY ON TV" in the "CONNECTION SETTINGS" menu to "ON". Set "ON-SCREEN DISPLAY" in the playback menu to "ON".



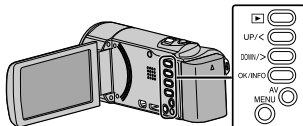
4 Start recording.

- Start playback on this unit and press the record button on the recorder.
- After playback is complete, stop the recording.

Operating the Menu

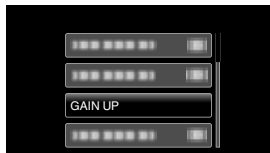
You can configure various settings using the menu.

To select/move cursor towards up/left or down/right, press the button UP/< or DOWN/>.

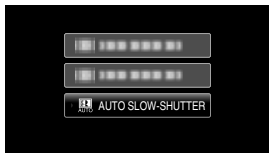


1 Press MENU.

2 Select the desired menu and press OK.



3 Select the desired setting and press OK.



To return to the previous screen
Press MENU.

- For more information on the settings, refer to the Detailed User Guide.

Customer Support Information

Use of this software is authorized according to the terms of the software license.

JVC (for inquires regarding this unit)

When contacting the nearest JVC office or agency in your country (refer to the JVC Worldwide Service Network at <http://www.jvc-victor.co.jp/english/worldmap/index-e.html>) about this software, please have the following information ready.

- Product Name, Model, Serial Number, Problem, Error Message
 - Computer (Manufacturer, Model (Desktop/Laptop), CPU, OS, Memory (MB/GB), Available Hard Disk Space (GB))
- Please note that it may take some time to respond to your questions, depending on their subject matter. JVC cannot answer questions regarding basic operation of your computer, or questions regarding specifications or performance of the OS, other applications or drivers.

Pixela (for inquires regarding the provided software)

Region	Language	Phone #
USA and Canada	English	+1-800-458-4029 (toll-free)
Europe (UK, Germany, France, and Spain)	English/German/French/Spanish	+800-1532-4865 (toll-free)
Other Countries in Europe	English/German/French/Spanish	+44-1489-564-764
Asia (Philippines)	English	+63-2-438-0090
China	Chinese	10800-163-0014 (toll-free)

Homepage: <http://www.pixela.co.jp/oem/jvc/mediabrowser/e/>

Please check our website for latest information and downloading.

Recordable Time

You can check the video recording time by pressing the OK/INFO button.

Approximate Video Recording Time

Quality	SDHC/SDXC Card					
	4 GB	8 GB	16 GB	32 GB	48 GB	64 GB
LS	40 m	1 h 30 m	3 h 10 m	6 h 30 m	9 h 30 m	13 h
LE	1 h 50 m	3 h 40 m	7 h 20 m	15 h 10 m	22 h 20 m	30 h 20 m
SSW/SS	1 h 20 m	2 h 50 m	5 h 40 m	11 h 30 m	17 h	23 h
SEW/SE	2 h 50 m	5 h 50 m	11 h 40 m	23 h 50 m	35 h 10 m	47 h 40 m

- LS/LE: High definition (1280 x 720 pixels, 16:9)
- SSW/SEW: Standard definition (720 x 480 pixels, 16:9)
- SS/SE: Standard definition (720 x 480 pixels, 4:3)
- The approximate recording time is only a guide. The actual recording time may shorten depending on the shooting environment.

Approximate Recording Time (Using Battery)

Battery Pack	Actual Recording Time	Continuous Recording Time
BN-VG107E	40 m	1 h 5 m
BN-VG114E	1 h 15 m	2 h 10 m
BN-VG121E	1 h 55 m	3 h 15 m

- The above are values when "MONITOR BRIGHTNESS" is set to "3" (standard).
- The actual recording time may be shorter if zooming is used or if recording is stopped repeatedly. (It is recommended to prepare battery packs ready for three times the expected recording time.)
- When the battery life is reached, the recording time becomes shorter even if the battery pack is fully charged. (Replace the battery pack with a new one.)

Troubleshooting

If you encounter problems with this unit, check the following before requesting service.

1 Refer to “Trouble” below.

2 Refer to the “Troubleshooting” section in the “Detailed User Guide”.

If you have difficulties operating the unit, refer to the detailed descriptions in the “Detailed User Guide”.

- <http://manual.jvc.co.jp/index.html/>

- You can also access the website from the supplied CD-ROM.

3 Refer to the FAQ of new products on JVC’s website.

- <http://www.jvc.com/>

4 This unit is a microcomputer-controlled device. Electrostatic discharge, external noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly.


In such a case, reset the unit.

① Turn off the power. (Close the LCD monitor.)

② Remove the AC adapter and battery pack from this unit, reattach them, and this unit powers on automatically.

5 If the above do not solve the problem, consult your nearest JVC dealer or JVC service center.

Trouble

	Trouble	Action	Page
Power	POWER/CHARGE lamp starts blinking when the monitor is closed.	<ul style="list-style-type: none"> • The battery pack is being charged. 	6
	Recording cannot be performed.	<ul style="list-style-type: none"> • Set to the recording mode with the  (Play/Record) button. 	13
Recording	Recording stops automatically.	<ul style="list-style-type: none"> • Turn off this unit, wait for a while, and turn it on again. (This unit stops automatically to protect the circuit when the temperature rises.) • Recording stops automatically after 12 hours of continuous recording. 	-
	No date/time display.	<ul style="list-style-type: none"> • Set “ON-SCREEN DISPLAY” in the playback menu accordingly. 	-
Playback	Sound or video is interrupted.	<ul style="list-style-type: none"> • Sometimes playback is interrupted at the connecting section between two scenes. This is not a malfunction. 	-

Other problems	Desired files cannot be found on the index screen (thumbnail display).	<ul style="list-style-type: none"> Set "VIDEO QUALITY" in the recording menu accordingly before selecting the playback mode. 	7 13
	The lamp does not flash during battery pack charging.	<ul style="list-style-type: none"> Check the remaining battery power. (When the battery pack is fully charged, the lamp does not flash.) When charging in either a hot or cold environment, ensure that battery is being charged within the permitted temperature range. (Otherwise, charging may stop to protect the battery pack.) 	6 6
	This unit heats up.	<ul style="list-style-type: none"> This is not a malfunction. (This unit may become warm when used for a long time.) 	-

Warning Indications

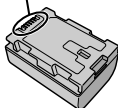
Warning Indications	Action	Page
RECORDING FAILURE	<ul style="list-style-type: none"> Turn off and on this unit again. If the above does not solve the problem, back up your files and execute "FORMAT SD CARD" in the "MEDIA SETTINGS" menu. (All data will be deleted.) 	- -
DATA RECORDED FILE IS TOO SMALL TO BE SAVED	<ul style="list-style-type: none"> When recording is stopped with the recorded time less than "0:00:00:14", the video will not be saved. 	-
MEMORY CARD ERROR!	<ul style="list-style-type: none"> Turn off and on this unit again. Remove the AC adapter and battery pack, then remove and re-insert the SD card. Remove any dirt from the SD card terminals. If the above does not solve the problem, back up your files and execute "FORMAT SD CARD" in the "MEDIA SETTINGS" menu. (All data will be deleted.) 	- - - -
CHECK LENS COVER	<ul style="list-style-type: none"> Appears for 5 seconds after power is turned on if the lens cover is closed or when it is dark. 	-

Cautions

Battery Pack

The supplied battery pack is a lithium-ion battery. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

Terminals



- **To avoid hazards**
 - ... **do not** burn.
 - ... **do not** short-circuit the terminals. Keep it away from metallic objects when not in use. When transporting, carry the battery in a plastic bag.
 - ... **do not** modify or disassemble.
 - ... **do not** expose the battery to temperatures exceeding 60°C, as this may cause the battery to overheat, explode or catch fire.
 - ... use only specified chargers.
- **To prevent damage and prolong service life**
 - ... do not subject to unnecessary shock.
 - ... charge within the temperature range of 10°C to 35°C. Cooler temperatures require longer charging time, or in some cases stop charging at all. Warmer temperatures prevent complete charging, or in some cases stop charging at all.
 - ... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
 - ... fully charge and then fully discharge the battery every 6 months when storing the battery pack over a long period of time.
 - ... remove from charger or powered unit when not in use, as some machines use current even when switched off.
 - ... do not drop or subject to strong impact.

Recording Medium

- **Be sure to follow the guidelines below to prevent corruption or damage to your recorded data.**
 - Do not bend or drop the recording medium, or subject it to strong pressure, jolts or vibrations.
 - Do not splash the recording medium with water.
 - Do not use, replace, or store the recording medium in locations that are exposed to strong static electricity or electrical noise.
 - Do not turn off the camcorder power or remove the battery or AC adapter during shooting, playback, or when otherwise accessing the recording medium.
 - Do not bring the recording medium near objects that have a strong magnetic field or that emit strong electromagnetic waves.
 - Do not store the recording medium in locations with high temperature or high humidity.
 - Do not touch the metal parts.
- When formatting or erasing data using the camcorder, only the file administration information is changed. The data is not completely erased from the recording medium. If you want to completely erase all of the data, we recommend either using commercially available software that is specially designed for that purpose, or by physically destroying the camcorder with a hammer etc.

LCD Monitor

- **To prevent damage to the LCD monitor, DO NOT**
 - ... push it strongly or apply any shocks.
 - ... place the camcorder with LCD monitor on the bottom.
- **To prolong service life**
 - ... avoid rubbing it with coarse cloth.

Main Unit

- **For safety, DO NOT**
 - ... open the camcorder's chassis.
 - ... disassemble or modify the unit.
 - ... allow inflammables, water or metallic objects to enter the unit.
 - ... remove the battery pack or disconnect the power supply while the power is on.
 - ... leave the battery pack attached when the camcorder is not in use.
 - ... place naked flame sources, such as lighted candles, on the apparatus.
 - ... expose the apparatus to dripping or splashing.
 - ... leave dust or metal objects adhered to the power plug or an AC wall outlet.
 - ... insert any objects in the camcorder.
- **Avoid using the unit**
 - ... in places subject to excessive humidity or dust.
 - ... in places subject to soot or steam such as near a cooking stove.
 - ... in places subject to excessive shock or vibration.
 - ... near a television set.
 - ... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
 - ... in places subject to extremely high (over 40°C) or extremely low (under 0°C) temperatures.
- **DO NOT leave the unit**
 - ... in places of over 50°C.
 - ... in places where humidity is extremely low (below 35%) or extremely high (above 80%).
 - ... in direct sunlight.
 - ... in a closed car in summer.
 - ... near a heater.
 - ... in high places such as on a TV. Leaving the unit in high places while a cable is connected may result in a malfunction if the cable is caught and the unit falls onto the floor.
- **To protect the unit, DO NOT**
 - ... allow it to become wet.
 - ... drop the unit or strike it against hard objects.
 - ... subject it to shock or excessive vibration during transportation.
 - ... keep the lens directed at extremely bright objects for long periods.
 - ... expose the lens to direct sunlight.
 - ... swing it excessively when using the hand strap.
 - ... swing the soft camcorder case excessively when the camcorder is inside it.
 - ... store the camcorder in a dusty or sandy area.
- **To prevent the unit from dropping,**
 - Fasten the grip belt securely.
 - When using the camcorder with a tripod, attach the camcorder to the tripod securely. If the camcorder drops, you may be injured and the camcorder may be damaged. When a child uses the unit, there must be parental guidance.

Specifications

Camera	
Power supply	Using AC adapter: DC 5.2 V, Using battery pack: DC 3.5 V - 3.6 V
Power consumption	2.2 W (when "MONITOR BRIGHTNESS" is set to "3" (standard)) Rated Current Consumption: 1A
Dimensions (W x H x D)	50.5 mm x 55 mm x 110.5 mm (excluding grip belt)
Mass	Approx. 185 g (camera only), Approx. 215 g (including supplied battery pack)
Operating environment	Allowable operating temperature: 0°C to 40°C Allowable storage temperature: -20°C to 50°C Allowable relative humidity: 35 % to 80 %
Image pickup device	1/5.8" 1,500,000 pixels (progressive CMOS)
Recording area (Video)	(LS/LE) 630,000 to 1,050,000 pixels (AIS ON) (LS/LE) 630,000 to 1,250,000 pixels (AIS OFF) (SSW/SEW) 340,000 to 1,050,000 pixels (dynamic zoom ON) (SSW/SEW) 630,000 to 1,050,000 pixels (dynamic zoom OFF) (SS/SE) 340,000 to 790,000 pixels (dynamic zoom ON) (SS/SE) 470,000 to 790,000 pixels (dynamic zoom OFF)
Lens	F1.8 - 6.3, f= 2.9 mm to 116.0 mm (LS/LE) 35 mm conversion: 45.6 mm to 1,824 mm (AIS ON) (LS/LE) 35 mm conversion: 42.0 mm to 1,680 mm (AIS OFF) (SSW/SEW) 35 mm conversion: 45.6 mm to 3,182 mm (dynamic zoom ON) (SSW/SEW) 35 mm conversion: 45.6 mm to 1,824 mm (dynamic zoom OFF) (SS/SE) 35 mm conversion: 55.9 mm to 3,376 mm (dynamic zoom ON) (SS/SE) 35 mm conversion: 55.9 mm to 2,236 mm (dynamic zoom OFF)
Zoom (Video)	Optical zoom: Up to 40x Dynamic zoom: Up to 70x (SSW/SEW), Up to 60x (SS/SE) Digital zoom: Up to 200x
Video recording format	AVCHD standard, Video: AVC/H.264, Audio: Dolby Digital (2ch)
Recording Media	SDHC/SDXC card (commercially available) Eye-Fi card (commercially available)
Clock battery	Rechargeable battery

Getting Started

Recording

Playback

Copying

Further Information

AC Adapter (AC-V10M)*

Power supply	AC 110 V to 240 V, 50 Hz/60 Hz
Output	DC 5.2 V, 1 A
Allowable operating temperature	0°C to 40°C (10°C to 35°C during charging)
Dimensions (mm)	83 mm x 28 mm x 40 mm (W x H x D: excluding cord and AC plug)
Mass	Approx. 77 g

* When using the AC adapter overseas, please prepare a commercially available converter plug for the country or region of visit.

● The specifications and appearance of this product are subject to changes for further improvement without prior notice.

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