GZ-HD40, GZ-HD30, GZ-HD10
New JVC HD Everio Line Includes World's First 50-Hour AVCHD Camcorder And Dual-Format Models
Two new HD models offer both AVCHD and MPEG-2 recording

Photo: GZ-HD30

JVC has added three new high definition camcorders to its HD Everio line, including a pair of dual-format models, one of which records up to 50 hours of AVCHD Full HD video.

Two new models, the GZ-HD40 and GZ-HD30, are the world's first AVCHD / MPEG-2 dual-format camcorders allowing access to the superior long time compression afforded by AVCHD, as well as MPEG-2's superior editing and post-production environment. Both offer 1920 x 1080 Full HD recording in both formats to a 120GB (GZ-HD40) or 80GB (GZ-HD30) internal hard disk drive. The third new model, the GZ-HD10, offers 1440 x 1080 recording in the AVCHD format to a 40GB hard drive.

Technologies behind the scenes include new CMOS imaging chips with interpolation technology, the HD Gigabrid Duo chip that includes codecs for AVCHD in all camcorders and MPEG-2 in the GZ-HD40 and GZ-HD30 as well as noise reduction technology, and 1920 x 1080/50P output for all camcorders via HDMI™ (V.1.3 with x.v.Colour). Ease of use innovations include Intelligent Grouping, which sorts and groups together similar themed scenes for easier access, and Digest Playback, which creates a video montage of scenes, much like a "coming attractions" clip, when they're burned to a DVD.

JVC designed the GZ-HD30 to meet the needs of a broader segment of people who shoot video, including family users. More compact than the GZ-HD40, it offers all of the performance and nearly all of the features of that model, except it has a slim 80GB internal hard disk for a maximum 33 hours of Full HD recording, and does not come with a docking station. As of June 2008, it is the world's smallest Full HD camcorder with 1.8" HDD.

JVC provided the GZ-HD40 with a 120GB hard disk drive for up to 50 hours of AVCHD Full HD video recording, and a docking station with the requirements of the prosumer or high-end enthusiast in mind.

JVC designed the small sized HD Everio GZ-HD10 thinking of the needs of budget-conscious users, but offering a high quality KONICA MINOLTA HD LENS and a 40GB hard disk that provides up to 16 hours of high-definition recording. The GZ-HD10's 1440x1080 AVCHD recordings are also up converted for playback at 1920 x 1080/50P via HDMI.

All three of the new HD Everio camcorders can connect to the optionally available CU-VD50 Everio SHARE STATION with stand alone playback. The new HD Everios can also connect to the JVC CU-VD3 SHARE STATION to offer an even more cost-efficient archiving and playback solution. The combinations offer the world's first PC-less solution for AVCHD and MPEG-2 burning *and* playback, with AVCHD DVD discs that can be shared with commonly available AVCHD compatible/Blu-Ray players.

1920 x 1080 Full HD Recording

The GZ-HD40 and GZ-HD30 both have three AVCHD recording modes that all record Full HD 1920 x 1080 video. The only difference among modes is the bit rate, and while using the highest bit rate yields the highest quality results, the image quality is remarkable even using the lowest bit rate EP mode. And since 1920 x 1080 is truly native HDTV resolution, it requires no conversion on the part of the display device to show high definition images.

The GZ-HD40 and GZ-HD30 also have the FHD mode for recording Full HD 1920 x 1080 MPEG-2 Transport Stream video with MPEG-1 Layer 2 audio. The GZ-HD10 records solely in 1440 x 1080 AVCHD format.
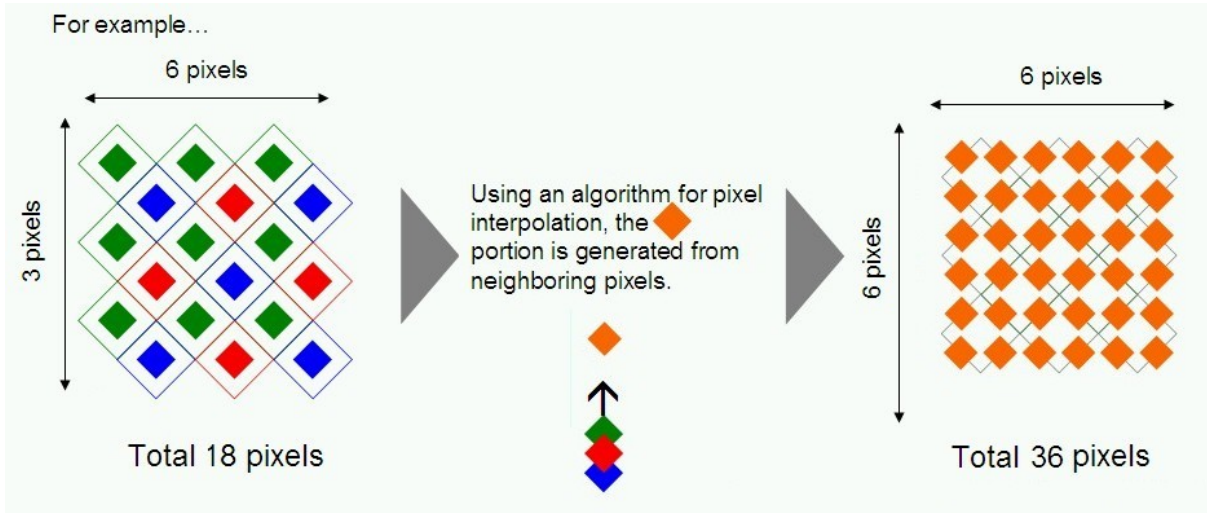
Model / Record Mode	AVCHD			MPEG-2 TS	
	1920x1080			1920x1080	1440x1080
	XP	SP	EP	FHD	1440CBR*
GZ-HD40 (120 GB)	15hr.	21 hr.	50 hr.	10 hr.	10 hr.
GZ-HD30 (80 GB)	10 hr.	14 hr.	33 hr.	6 hr.	6 hr.
	1440x1080				
GZ-HD10 (40 GB)	5 hr.	7 hr.	16 hr.		
	For all camcorders				
Micro SDHC Card (8GB)	1hr	1hr 28 min.	3hr 20min		
System Bit Rate	(VBR) Ave. 17 Mbps	(VBR) Ave. 12 Mbps	(VBR) Ave. 5 Mbps	(VBR) Ave. 26.6 Mbps	(CBR) Ave. 27 Mbps

*For HDV compatible stream via i.LINK

Continuous shooting time and typical shooting time are approximate. To record video, a microSDHC card with Class 4 or higher performance is required. microSD memory cards (256MB to 2GB) and microSDHC memory cards (4GB and 8GB) have been tested for the following brands: Panasonic, Toshiba, SanDisk, ATP. Note that using other media may result in recording failure or data loss.

New CMOS Chips with Interpolation Technology
The image sensors used in the new HD Everio line are newly developed small size but high resolution 1/3" and 1/4.5" CMOS chips. This CMOS uses proprietary interpolation technology based on what JVC developed for its 3CCD cameras. This algorithm makes it possible to generate virtual pixel data (orange diamond area shown in illustration below) from the red, green and blue physical pixels, thereby providing image information that actually surpasses what's required for 1920 x 1080 Full HD imaging, or for 1440x1080 imaging in the GZ-HD10.

For example…

6 pixels

3 pixels

Using an algorithm for pixel interpolation, the portion is generated from neighboring pixels.

Total 18 pixels

6 pixels

6 pixels

Total 36 pixels

*GZ-HD10 pixels are not diagonal
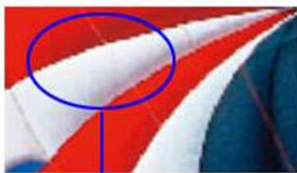
HD Gigabrid Duo Engine
JVC's HD Gigabrid video engine, which processes in full 1920 x 1080 progressive video, was the result of years of experience in signal-processing technology, and uses five digital noise-reduction algorithms as well as signal processing to improve horizontal scan resolution by approximately 20 percent over JVC's previous interlace technology, for an extremely clear and sharp image.

New this year with the HD Gigabrid Duo engine is its further advanced integration, adding the AVCHD codec (GZ-HD40/30/10), and incorporating all functions of the previous HD Gigabrid engine (including MPEG-2 codec for GZ-HD40/30), as well as the USB Host controller function for use with an Everio SHARE STATION.

1080p 50 Frame per second Progressive Output Function
Enabling output of a 1080p 50 fps progressive signal on all three models allows recordings to be enjoyed on high-end displays. Using the same high power DynaPix technology as in JVC advanced displays, conversion to 1920 x 1080p at 50 fps provides seamless natural video, free of motion judder during fast action activities, jaggy lines on angles, and moiré patterns on fine detail when zooming. 1920x1080 HD discs played back from CU-VD50 or via the camera from CU-VD3 SHARESTATIONs are also converted to 50 fps progressive.
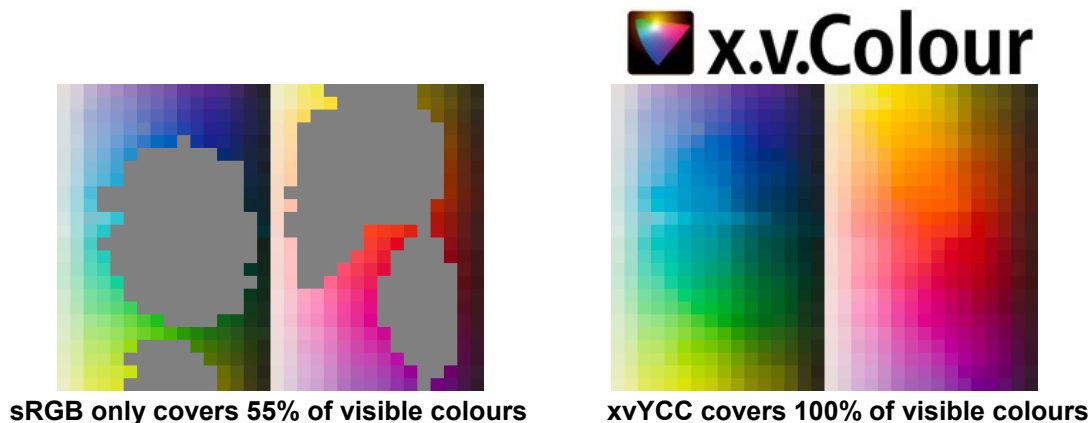

Interlace Output

Progressive Output

Jaggies are noticeable

Diagonals are smoothed out

HDMI™ (V.1.3. with x.v.Colour™)
The new JVC HD Everio Camcorders record using x.v.Colour™ technology. The universal standard xvYCC, known as x.v.Colour™, provides more accurate colour reproduction with more detail and shades that look more natural to the human eye. It can display 100 percent of the colours that the human eye is capable of perceiving, whereas the traditional sRGB system can only display approximately 55 percent. The difference in colour reproduction performance is especially noticeable in greens and yellows. These new HD Everio camcorders output to televisions directly using HDMI™ (V.1.3. with x.v.Colour™).

sRGB only covers 55% of visible colours   **xvYCC covers 100% of visible colours**

Graphics provided by: JEITA (Japan Electronics and Information Technology Industries Association)
x.v.Colour and its logo are trademarks

Extremely Quick Response, Designed for high quality shooting
These new HD Everio models minimise the risk of missing an important shot with faster response time for many operations. For instance, the time lag from pressing the trigger to the start of recording is only 0.08 seconds (trigger sound set to off). That is nearly instantaneous, and a great improvement over the more common 0.6 second delay. Likewise, the time it takes to power-on the unit has been reduced to 0.6 seconds, whereas competitive models may take over a second-and-a-half. And to play footage, it takes only 3.5 seconds to display the playback picture, which is about half the time required for other manufacturers' products. These improvements can mean the difference between capturing a crucial shot or missing it.

As well, JVC HD Everio camcorders include functions to help achieve satisfaction in shooting worthy of high definition
   * Hybrid HDD and MicroSD Recording.
   * Auto Light
   * Focus Assist and Manual settings
   * Simultaneous to Video Progressive Still Shooting
   * Quick power off
   * 2.8"/ (2.7" GZ-HD10) Clear wide LCD with Auto Backlight Brightness
   * Mic input and Accessory Shoe
   * Direct Backup button
   * In Camera File Editing (AVCHD)

Innovations in Ease of Use
JVC has equipped its new HD Everio models with new functions to enhance usability. First is the "Intelligent Grouping" function which at the touch of a button rapidly sorts through and categorises the recordings stored on the camcorder's hard disk into different groups. Up to 1,000 scenes can be grouped in three seconds or less. With scenes categorised, users will have faster and easier access to desired scenes, a real convenience as the hard drive fills up.

As an extension of this technology, "Digest Playback" automatically generates a video montage of just the highlight scenes when HD Everio recordings are copied to a DVD. This digest version of the disc contents, looking much like a coming-attractions clip, will help the viewer get a general idea of what the disc is about, saving precious time.

PC-less Archiving using Exclusive DVD Burners

By connecting the GZ-HD40/HD30/HD10 directly to an optional CU-VD50 or CU-VD3 HD Everio SHARE STATION via USB, the user can burn 12cm AVCHD discs from all cameras, or MPEG-2 data discs from the GZ-HD40 and 30 to make backups and permanent archives of selected scenes in any desired order with just a few simple steps.

There are several options for selecting clips to be burned to disc — all clips, manually specified clips, clip files not yet copied, by date, video playlists created in-camera and comprised of multiple user-selected clips, or by event type for those clips that have been tagged with an icon representing an event category (e.g. birthday, baby, graduation, vacation, etc.).

Created AVCHD discs can be played on AVCHD compatible/Blu-ray players. The CU-VD50 can also be used as an external DVD drive/burner when connected to a PC. The CU-VD50 plays back on a TV via HDMI in 1920x1080 50p and with x.v.Colour^{TM}, analogue component and as well in standard definition video. The slim CU-VD3 offers the same burning features, but with playback via the camcorder.

Full Complement of Interfaces

All three models are equipped with USB2.0 and HDMI digital interfaces on the camcorder. The Docking Station supplied with the GZ-HD40 is equipped with USB2.0 and i.LINK (IEEE 1394).

USB is primarily for file saving, HDMI for digital viewing on large screen displays, and i.LINK streams high definition video in full resolution or the 1440CBR mode. High definition video streamed by i.LINK in the 1440CBR mode is HDV-compatible and allows footage to be edited using HDV-compatible software (functionality might be limited with some applications). HD recorded material is down-converted for output in standard definition via the analogue component/ composite output.

High Value Software Supplied

For editing and archiving via PC, the new HD Everio models come with the CyberLink BD Solution software suite for Windows. This includes "PowerDirector™ 6 NE" for HD video editing, "PowerProducer™ 4 NE" for authoring high definition Blu-ray discs, AVCHD discs and DVD-Video discs, "PowerCinema™ NE for Everio" for HD file management and playback, and "PowerDVD™ 7 NE" for playback of AVCHD discs.

The GZ-HD40/HD30 also come with a plug-in that allows HD Everio's MPEG-2 files to be used with Apple iMovie HD 6 and Final Cut Pro 5 or 6 video software for the Macintosh. For all camcorders AVCHD files can be used with Apple's AVCHD applicable software without a plug-in for the Macintosh.

Specifications

Model name	GZ-HD40	GZ-HD30	GZ-HD10
Video / Audio recording and playback format	AVCHD H.264 / Dolby Digital (AC3) 2ch MPEG-2 TS/ MPEG-1 Audio Layer II		AVCHD H.264 / Dolby Digital (AC3) 2ch
Image sensor	1/3" CMOS 2.68 Megapixel		1/4.5" CMOS 1.84 Megapixel
Lens	Video: F Wide(1.8)-Tele(2.2): f=4.5mm-45mm (35mm lens equiv.: 50mm-500mm) Optical 10x Zoom (digital 200x zoom)		Video: F Wide(1.8)-Tele(2.5): f=3.2mm-32mm (35mm lens equiv.: 42.2mm-422mm) Optical 10x Zoom (digital 200x zoom)
Filter diameter	43.0 mm (0.75 mm pitch)		
Microphone	Stereo		
Monitor	207,000-pixel 2.8-inch colour LCD (16:9 wide screen)		123,000-pixel 2.7-inch colour LCD (16:9 wide screen)
Still format	JPEG (supports DCF, DPOF and PRINT Image Matching III)		
Hard disk capacity	120 GB	80 GB	40 GB
Interfaces on camcorder	HDMI output, USB mini-connector, AV output (φ3.5mm mini plug) terminal, component output, microSD card slot, microphone input, DC-in, headphone output (except GZ-HD10)		
Interfaces on docking station	USB mini-connector, AV output (φ3.5mm mini plug) terminal, component output, i.LINK output, DC-in	—	
Power source	(AC adapter) DC 11.0V, (Battery) DC 7.2V		
Approx. power consumption	6.6 W		4.8 W
Dimensions (W x H x D)	73 x 68 x 123 mm 2-7/8 x 2-11/16 x 4-7/8 inches (including maximum extrusion)	71 x 68 x 123 mm 2-13/16 x 2-11/16 x 4-7/8 inches (including maximum extrusion)	
Approx. weight with strap	455g (1.01 lb), 540g (1.2 lb) including BN-VF815 battery	440g (.98lb), 525g (1.16lb) including BN-VF815 battery	430g (.95lb), 475g (1.05lb) including BN-VF808 battery

Approx. continuous shooting time (typical time including zoom in parentheses)[3]

Battery type	Model	BN-VF808	BN-VF815	BN-VF823
LCD Backlight Standard Brightness	GZ-HD40 GZ-HD30		1 hour 25 min. (45 min.)	2 hours 10 min (1 hour 5 min)
	GZ-HD10	1 hour. (30 min)	2 hour. (1 hour)	3 hours and 5 min (1 hour 35 min)

GZ-HD40/30 Approx. number of stills[4]

Image size	2432 x 1368 16:9 pixels	1920 x 1080 16:9 pixels	1824 x 1368 4:3 pixels	1440 x 1080 4:3 pixels	640 x 480 4:3 pixels
Image mode	Fine/ Standard	Fine/ Standard	Fine/ Standard	Fine/ Standard	Fine/ Standard
512MB	330/ 510	510/ 800	440/680	680/ 1060	3320/ 5980
1GB	670/ 1040	1040/ 1630	880/ 1370	1370/ 2160	6720/ 9999
2GB	1350/ 2100	2100/ 3210	1790/ 2770	2770/ 4360	9999
4GB	2700/ 4200	4200/ 6410	3580/ 5540	5540/ 8700	
8GB	5420/ 8420	8420/ 9999	7180/ 9999	9999	
HDD	9999				

*4 Number of still pictures is approximate.

GZ- HD10 Approx. number of stills[4]

Image size	1920 x 1080 16:9 pixels	1440 x 1080 4:3 pixels	640 x 480 4:3 pixels
Image mode	Fine/ Standard	Fine/ Standard	Fine/ Standard
512MB	510/ 800	680/ 1060	3320/ 5980
1GB	1040/ 1630	1370/ 2160	6720/ 9999
2GB	2100/ 3210	2770/ 4360	9999
4GB	4200/ 6410	5540/ 8700	
8GB	8420/ 9999	9999	
HDD	9999		

*4 Number of still pictures is approximate.

Provided Accessories
AC Adapter, Battery Pack, Shoulder Strap, AV Cable,
USB Cable, Component Video Cable, Remote Control, Software CD-Rom

CD-ROM Contents
- "Digital Photo Navigator (for Windows®)"
- CyberLink BD Solution™ "Power Cinema™ NE for Everio (for Windows®)"
  "PowerDirector™ 6NE (for Windows®)" "PowerProducer™ 4NE (for Windows®)"
  "PowerDVD™ 7 NE (for Windows®)"
- "QuickTime component for Everio (for Macintosh)" (GZ-HD40/HD30 only.)

PC Connection Kit System Requirements
<Windows®>
- Digital Photo Navigator
- CyberLink BD Solution™

Microsoft ® Windows® XP Home Edition(SP2) / Professional(SP2) (Pre-install model)
    *It must be equipped with a standard USB 2.0 interface.
Microsoft ® Windows Vista® Home Basic / Home Premium (32-bit edition, pre-installed)
CPU:
<GZ-HD40/HD30>
    Intel® Pentium® 4, at least 3.2GHz (Intel® Core™ Duo, at least 1.66GHz recommended.)
    Intel® Pentium® M at least 1.8GHz
    *For AVCHD, Intel® Core™ Duo, at least 1.66GHz.
<GZ-HD10>
    Intel® Core™ Duo, at least 1.66GHz.
RAM Windows® XP: At least 1GB
       Windows Vista®: At least 2GB
Unused space on hard disk drive: Approx. 750 MB or up needed. When creating a Blu-ray
disc, 30GB or up is required. (60GB or up is recommended).

*Even if a PC meets the listed system requirements, there may be cases of dropping frames
during HD playback, or editing may take excessive time. For faster and more responsive
operation, we recommend use of a PC with higher performance such as with an Intel® Core™
2 Duo CPU and 2GB RAM. (For AVCHD editing, Intel® Core™ 2 Duo at least 2.4GHz
recommended.)

<Macintosh>
<GZ-HD40/HD30>
- "QuickTime component for Everio" (for MPEG-2)
Hardware: Macintosh with 1.25GHz or faster PowerPC G4/G5, or Intel® Processors.
           (Intel® Core™Duo at least 1.66GHz recommended)
           * It must be equipped with a standard USB 2.0 interface.
OS: Mac OS X (10.4.4 to 10.4.11, 10.5.1 to 10.5.2)

RAM: At least 512 MB, at least 1GB recommended
*The software for AVCHD is not included.
  The applicable software is required and please refer to its System Requirements.
<GZ-HD10>
*The software for Macintosh is not included.
  The applicable software is required and please refer to its System Requirements.

- Above conditions do not guarantee operations of all PCs with provided USB 2.0 interfaces.
- Above conditions are as of June 16, 2008. They are subject to change.
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- HDV and the HDV logo are trademarks of Sony Corporation and Victor Company of Japan, Limited (JVC).
- "AVCHD" and the "AVCHD" logo are trademarks of Matsushita Electric Industrial Co., Ltd. and Sony Corporation.
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- Product outer design and specifications may be changed without notice.
- Details will be available in the JVC catalogue and on the JVC website.

CU-VD50 Everio DVD Burner -- Specifications

While connecting with Everio GZ-HD40/ HD30/HD10	Interface			USB 2.0
	Discs that CU-VD50 supports*[5]			DVD-R, DVD-RW, DVD-R DL
	Record time (*Recording time is changed by title volume)	AVCHD	per 4.7GB media	Approx.30 min.(30min.XP mode, 4GB)
			per 8.5GB media	Approx.60 min.(60min.XP mode, 8GB)
		MPEG-2	per 4.7GB media	Approx.20 min.(20min.FHD mode, 4GB)
			per 8.5GB media	Approx.45 min.(40min.FHD mode, 8GB)
	Interface cable			Provided USB cable
While connecting with PC	Interface			USB 2.0 or USB 1.1
	Data buffer capacity			2 MB
	Data transmission speed	Writing	DVD-R	Max. x8
			DVD-RW	Max. x6
			DVD-R DL	Max. x6
		Reading	DVD-R	Max. x8
			DVD-RW	Max. x8
			DVD-R DL	Max. x8
			CD-R	Max. x24
			CD-RW	Max. x24
			CD-ROM	Max. x24
	Compatible discs	Writing		DVD-R, DVD-RW, DVD-R DL
		Reading		DVD-R, DVD-RW, DVD-R DL, CD-ROM, CD-R, CD-RW
	OS	OS		'Windows® XP Home Edition / Professional (pre-installed) 'Windows Vista® Home Basic/Home Premium (32-bit edition, pre-installed)
		CPU		Intel®Pentium® III 800 MHz or up (Pentium®4 2GHz or up recommended)
		RAM		128 MB or up (256 MB or up recommended)
	Interface cables			Provided USB cable with Everio
	Support software			CyberLink PowerProducer 4NE (provided with Everio, for DVD creation)
				CyberLink Power2Go 5.5 Lite (provided, for data writing)

Playback functions	Support discs	Everio Direct Burning created disc.
		Everio and CU-VD50 provided software created disc.
		AVCHD disc.
	Output terminals	HDMI, Component (Y,Pb,Pr), Video, AUDIO L/R
Recommended discs*6	DVD-R	JVC, TDK, Verbatim, SONY
	DVD-RW	JVC
	DVD-R DL	JVC, Verbatim
Dimensions (W x H x D)		6 x 1.7 x 7.7 inches (152 x 42 x 195 mm)
Weight		Approx. 2.03 lbs (920g)
Standard current		2.3A

*5: The CU-VD50 does not support 8-cm discs.

*6: Depending on the disc the CU-VD50 may not function optimally, so using manufacturers' media mentioned above that was tested with the CU-VD50 is recommended.

- HDMI cable is not included with the CU-VD50.
- The CU-VD50 does not support Macintosh.
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- Other names of companies and products are registered trademarks of those companies.
- Product outer design and specifications may be changed without notice.
- Details will be available in the JVC catalogue and on the JVC website.

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