

JVC®

The Perfect Experience / —

ProHD

Compact High Definition Camcorder

GY-HD200

ProHD — The complete HD solution



720p/24, 30, 60

HDV™

HDV 720p

Mini DV

JVC ProHD — Defining the future of professional video

With the introduction of JVC's ProHD, the promise of digital technology has finally been fulfilled. Equipped with robust professional features, yet surprisingly affordable and remarkably compact, ProHD embraces the HDV format to deliver a complete high-definition solution that has been designed to meet the needs of today's most demanding professionals, while retaining the ability to adapt to future requirements. Since 1996, JVC has continued to develop and diversify its digital video offerings in response to the rapidly changing environment of visual communications and production. JVC continues to evolve its digital cameras and recorders with ground-breaking features and varied storage options, including full-size DV tape and Hard Disk Drives.

Now with the production and delivery of video content shifting to high definition, JVC has combined its expertise in camera, encoding and storage technologies to create an advanced yet affordable HD solution. JVC's ProHD system, adopting the HDV720P format, utilizes widely available nonproprietary technologies such as MPEG-2 compression, DV recording media and conventional hard disk drives. Based on input from industry principals and leading end users, JVC has developed a system with the most sought-after professional features and performance.

Noteworthy ProHD features include full HD progressive image scanning, true 24p frame capture, and a dual recording system using tape & HDD. As ProHD evolves, JVC will continue to pursue the optimal method of storage media for our professional video products.

The latest addition to the ProHD line is the GY-HD200, a compact shoulder camcorder featuring improved image capturing characteristics and full-frame 60p recording for smooth, continuous images.

Designed and built for professionals, ProHD is the fulfillment of the digital promise, offering true high definition performance in a compact, affordable system.



ProHD — Concept of JVC's Affordable HD Solution

1. HDV Full Progressive Scanning (720p)

Leading industry professionals told us that they wanted a full-frame progressive scanning system that would shoot and record the highest quality continuous moving images. ProHD uses the 720/60p progressive HDV format and produces crisp, native HD images which perfectly match today's digital displays and which can be converted easily, without degradation, to interlaced scanning pictures.

2. Time Code

As a professional system, ProHD products include the facility to record and display timecode. Convenient menu operation makes it easy to preset time code at the beginning of a tape. Simply select REC RUN or re-generation mode. User bits are also available.

3. Highly efficient video compression

To provide the highest quality HD recording, JVC uses the broadcast industry standard MPEG-2 Main Profile at H-14. Offering far greater efficiency than frame-bound systems, ProHD records at data rates at or above commercial broadcast rates. Recent advancements in non-linear editing have made it possible to edit ProHD on virtually all popular non-linear editing systems. Direct digital transfers via IEEE 1394 ensure the quality is maintained throughout the transfer process.

4. Dual recording system

Designed to utilize both DV tape and hard disk drives, ProHD offers the ultimate in media versatility, maximizing productivity with efficient, economical editing and low-cost archiving. Now you can safely archive the original tape cassette and then plug the hard disk straight into your NLE. Editing can start right away — no need to make dubs or transfer data.

5. Real 24p

With ProHD, the dream of creating HD video with the essence of film has at last been realized. By capturing and recording at the film frame rate of 24fps, and offering extensive user configurable settings such as exposure, gamma and detail, ProHD becomes an important tool for creative expression. For the ultimate form of display on the cinema screen, 24 frame progressive recordings can be readily transferred to 16 mm or 35 mm film. The optional HZ-CA13U Film Lens Adapter further empowers digital filmmakers by enabling the use of 16mm film lenses with a PL mount.



HZ-CA13U
16mm Film Lens
Adapter



GY-HD200

The advantages of ProHD

1. HDV format

HDV™

HDV 720p

HDV is a video format designed to enable the recording of high definition MPEG-2 video on standard DV media (DV or MiniDV cassette tape). The HDV format was defined by four companies: Canon Inc., Sharp

Corporation, Sony Corporation, and Victor Company of Japan Limited (JVC). The specification of the HDV format incorporates two versions, one progressive (720p) and the other interlaced (1080i). HDV uses the same track pitch and tape speed as the DV format, and therefore the recording times are the same length as the DV format.

2. HD Progressive (720p/60) format for high quality moving pictures and digital stills

■ Progressive scanning

JVC's ProHD products use the same progressive scanning system used in high-end HDTV cameras. Because the GY-HD200 uses a full-frame (60p) progressive scanning system, it has the unique ability to capture and store full frames of image information. An added bonus of progressive scanning is that it is a very simple process to convert a progressive image to interlaced, but not vice versa. When progressive recordings are paused or played in slow motion, each individual frame contains the full detail of the original image — excellent for viewing and analyzing motion. Stills and prints captured from HD progressive video look far better than from interlaced video. In any case, today's flat panel television displays and fixed matrix projectors, such as D-ILA, DLP and LCD, all utilize a native progressive scanning systems. This means that JVC's progressive HDV recordings can be displayed without imperfection, because they do not need to pass through the degenerative process of de-interlacing, prior to being displayed.

■ HDV and DV compatibility

The HDV format uses the same recording track pitch (10 µm) as Professional DV, meaning that ProHD also offers track pitch compatibility with the DV format and the same recording time. This remarkable HD recording capability was achieved by developing a new high-power MPEG codec system capable of maintaining high-definition picture quality, whilst compressing the data to 19.7 Mbps bit rate. With its superior resolution and advanced processing, ProHD delivers top performance in both its native 16:9 HD mode and in the SD mode, either 16:9 or 4:3.

■ Progressive HDV-compatible support

To maximize picture quality and performance from input to output, JVC employs the HDV 720 progressive system. Progressive HDV's resolution of 1280 x 720 is the same as the native resolution of most HD display devices in use today (LCD, plasma, DLP, D-ILA). HDV 720p is thus natively compatible in terms of both resolution and scanning system with the vast majority of today's HD displays.

3. True 24 Frame Capture

24p progressive full HD images are ideal for cinematographic applications. From shooting to editing and distribution, an HD system can be established for film-like productions. Unlike 24p images in standard definition, when real 24p HD video is down-converted to SD, the result is truly film-like DVDs. The camcorder itself, with its video lens removed and replaced by a film lens converter system, such as the Mini 35 from P & S Technik, effectively becomes a digital film camera.

4. JVC's dual recording system

The optional JVC Hard Disk Recorder DR-HD100 creates a dual recording system of tape and hard disk. This system is already utilized by Professional DV users the world over. The many advantages inherent in JVC's dual recording system of tape & hard disk drive are well appreciated. It was only natural that JVC's range of ProHD models would include a Hard Disk Drive recorder and one that can operate equally in DV and HDV modes. The dual recording system provides fast and efficient HDD-based editing and cost-effective tape archiving, using low-cost tapes. Thanks to the newly developed MPEG-2 encoding IC, high-quality pictures can be recorded on readily available compact DV cassettes, so running costs are minimal. As no special equipment or exclusive media are required, the operating costs of the total system can be kept low. The DR-HD100 is mounted at the rear of the camcorder, utilizing an optional bracket which is provided by the leading battery systems manufacturers.

The GY-HD200, fitted with Mini 35 lens film adapter from P & S Technik.



Optimized picture quality from innovative JVC technology within GY-HD200/250

Horizontal resolution and signal-to-noise ratio have been enhanced, making the already high ProHD picture quality even better. Together with ProHD's superior color reproduction, these improvements ensure true professional quality HD imaging.

a. 14-bit A/D converter

To improve both the S/N ratio and the horizontal resolution, a new 14-bit A/D converter was specially developed by JVC to prevent signal deterioration and to generate a fourfold increase in gradations.

b. Wideband front end processing

The ProHD camcorder uses a wideband analog front end to process its CCD sampling via the 14-bit A/D converter. This further improves the S/N ratio and horizontal resolution by optimizing the CCD drive circuitry. The new LVDS (Low Voltage Differential Signal) interface minimizes any other possible signal degradation and so contributes to the improved S/N ratio.

c. Newly-developed pixel converter

To enable 720p/60 recording, a new super encoder and a new pixel converter were developed, incorporating an adaptive filter which optimizes the scalar performance of cross-converted signals, including 1080i. The resultant effects are increased resolution and reduced aliasing. Objects thus have much more natural looking edges and images are therefore extremely lifelike in appearance.

GY-HD200

GY-HD200 ProHD Compact Shoulder Camcorder

Professional ProHD camcorder with smooth 720p/60 capture for best quality images in ENG, EFP and digital cinematography

Designed for news gathering, field production and digital cinematography, the GY-HD200 offers full-frame 720p/60 imaging and real 24p recording capability. Its high resolution and smooth motion make it perfect for ENG and recording sports events, while its HD progressive 24 frames per second record rate lends itself to cinematic productions, giving them a very natural and film-like appearance. So whatever your HD requirements may be, this ProHD camcorder from JVC provides an affordable HD solution which can meet your needs today and tomorrow.

Professional specifications

HDV and DV compatible

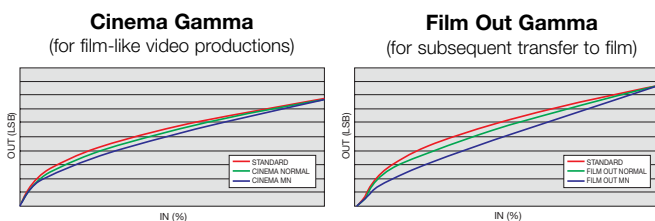
As the HDV format uses the same recording track pitch as Professional DV, the GY-HD200 can record signals in either standard (576i/60) or high (720p/60) definition, according to the user's needs.

Real 24p camcorder

The GY-HD200 also offers real HD 24p recording capability — previously available on only the most expensive HD cameras. Ideal for DVD production, HD progressive 24-frame-per-second recording makes it possible to shoot images with film-like quality and smooth motion. Once recorded, those images can easily be transferred without frame rate conversion to 16 mm or 35 mm film with full HD fidelity.

ProHD's outstanding image quality is supported by a wide range of powerful features which have great appeal to true film professionals. These include the image inverse function, as required by certain film lens adapters, and a menu to select the appropriate combination of color matrix and film gamma type. Cinema Gamma is deployed to assist in making video look like film, and Film Out gamma can be used when the video is to be ultimately transferred to film.

This choice of gamma means that the cinematographer, irrespective of whether the final production will be presented as film or as video, can be sure of always getting the best possible image.



Interchangeable HD lenses

The GY-HD200 features a standard professional 1/3" bayonet lens mount, providing the opportunity to use a variety of other professional HD lenses. In addition to the standard Th16x Fujinon lens supplied, a number of other 1/3" bayonet mount zoom lenses is available. Canon offers a powerful 20x5mm zoom lens and Fujinon similarly an 18x4.2mm, besides a very wide 13x3.5mm lens and 17x5mm lens.

Furthermore, lens mount adapters ACM-12 and ACM-17 convert the mount to 1/2" and 2/3" bayonet mount respectively, providing cost savings by way of using existing 1/2" and 2/3" lenses. Also, to enable the use of film camera lenses, specialist film lens adapters are available.



Fujinon HTs18x4.2BRM



Canon KT20x5BKRS

3-CCD camera system with 720p HD CCDs

The GY-HD200 uses three 1/3" high definition CCD image sensors. Each array has a full square pixel resolution of 1280 x 720 and uses a micro lens system. Since this native resolution matches that of most HDTV displays, the need for image scaling is eliminated, further enhancing the quality of the recorded images. Another advantage of using these CCDs is their sophisticated circuitry which virtually eliminates both lag and image burn.

Uncompressed 720p/60 live output via component

When required, the GY-HD200 can output a live uncompressed 720p/60 signal in the form of analog component signal, making it an excellent choice as a video server feed.

Uncompressed 1080i/60 output via component

One very important reason why JVC developed the progressive form of HDV was the ease and speed with which a progressive signal can be converted to other formats, irrespective of whether the conversion is up, cross or down. Conversion is always performed in real time because the time-consuming complexity of de-interlacing is not required.

Professional functions

Compact shoulder mount

JVC's ProHD camcorders are the first fully professional HD camcorders to feature a compact design and shoulder mount. Like its predecessors, the GY-HD200 offers excellent mobility and enhanced usability, while its flexible range of ergonomic adjustments ensures that any camera operator, regardless of stature or physique, can support the camcorder steadily and, above all, comfortably.

Professional functions and switch layout

In addition to the Full Auto Shooting to handle difficult or variable lighting environments, the GY-HD200 is equipped with an array of functions that give professionals creative flexibility. These include, zebra, gain, white balance and full shutter control. Also, the GY-HD200's switches have been positioned where professional camera operators expect them to be. Shooting is intuitive, precise, easy, and error-free, because the learning process is minimized dramatically, making the GY-HD200 the ideal camera for any assignment.

Detachable 230,000-pixel LCD color viewfinder

The viewfinder's eyepiece can be moved backwards and forwards and can also be adjusted laterally for left or right eye shooting, so the

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GY-HD200 ProHD Compact Shoulder Camcorder

viewfinder can fit any operator comfortably. JVC's own developed proprietary and patented Focus Assist control ensures fast and easy focusing. It has 3 settings, (high, medium & low) depending on the type of subject in view. To make focusing even easier, a black and white mode is available. Stronger contrast and reduced color noise make visualization and composition easier in this mode and put less strain on the eyes, which allows longer periods of shooting. The eyepiece viewfinder can be used at same time as the LCD display. If it is not required, the eyepiece viewfinder may be detached.

3.5" LCD display panel

This 250,000-pixel 3.5" color TFT LCD monitor provides a high-resolution image during shooting and playback. JVC's own developed Focus Assist control ensures fast and easy focusing. A push button selects three display modes:

1. Video only
2. Video images with text information overlay including time, status, mode and other data are shown on the screen.
3. Only information such as time, status, mode, time code, audio levels and other data is shown on the screen.

Various audio-related functions

When color bars are output, an audio reference level (test tone) can also be output if required. This is requested via the menu. The audio reference level can be set at -12 dB or -20 dB as required. To minimize extraneous noise picked up by the microphone, a "wind cut" function is provided.

Versatility and flexibility

Camera settings recorded on SD card

Customized settings can be stored on a standard SD memory card and loaded into another GY-HD200 or changed on site, as required.

IEEE 1394 (FireWire) in/out

A convenient IEEE 1394 interface allows easy direct connection to NLE systems or to a PC for capturing, editing and archiving.

User-friendly design

Universal ergonomic design

The camcorder adapts to fit any shape of body comfortably because of the shoulder pad that can be moved back & forth, the left or right eye viewfinder that can also adjust back & forth, and the padded audio monitor that slides up & down.



Patented "FOCUS ASSIST" function

A JVC patented device, Focus Assist, turns focusing into a fast, easy and accurate process. When Focus Assist is activated, the picture in the viewfinder becomes monochrome and all objects which are in focus take on a colored fringe. In addition to the factory default Middle position, Low and High positions are available. In the Low position, you can limit the area in focus for more precise focusing. This is particularly helpful when using the technique of pulling focus. Focus Assist works equally in the 0.44" viewfinder and the 3.5" LCD panel. There are two Focus Assist buttons, one for each of handheld and shoulder operation.



Out-of-focus image



In-focus image

The edge of the in-focus subject is shown in color, telling the operator that the subject is in-focus. A major benefit of this system is that it operates in real time.

Connect to optional external HDD

The camcorder has a hard disk drive accessory option, DR-HD100, which connects via the IEEE 1394 port. Footage captured on the hard disk can be edited immediately without having to wait for data to be transferred.

Other features

- Two XLR audio inputs
- Full Auto Shooting
- Adjustable color matrix
- LCD mirror mode
- Two-mode composite out
- Color bars
- The "heel" with the KA-V100 being the "toe" for tripod based attachment

DR-HD100 Hard Disk Drive incorporating the latest DTE (Direct to Edit™) technology

Connects to GY-HD200 camcorder

The DR-HD100 has been designed specifically to attach to the GY-HD200 camcorder. Interlocked to the camcorder's record trigger, HD and SD images can be recorded together with audio and time code. It is powered by either a built-in rechargeable or an external battery. The DR-HD100 is supplied with its own cradle, from which it is detached easily. Optional brackets are available for mounting the HDD recorder at the rear of the camcorder.

Compatible with popular NLE systems for HDV and DV editing

DTE™ technology permits the DR-HD100 recording data in HDV and DV to be set to the NLE's native file format. This means that no time is lost to the lengthy processes of file transfer and rendering. Use DR-HD100 instantly with the most popular applications from Adobe, Apple, Avid, Canopus and many more. As new application support is released, the DR-HD100 can be updated in the field with new system software, by an easy process using the disk drive itself.

Integrated with camcorder and disk drive operation

Attached to the GY-HD200, the DR-HD100's record and record/pause functions are controlled from the camcorder. Time code generated by the camcorder is recorded to files on the DR-HD100. The status of the DR-HD100 and other vital information appears in the camcorder's viewfinder and LCD display.

Long record times

This hard disk drive option extends uninterrupted record time by hours. For example, an 80GB FireWire drive can store 6 hours of DV video and 7.5 hours of HDV video, and a 40GB drive does half these times. It is possible also to daisy chain up to four external drives of different capacities to the DR-HD100, enabling uninterrupted recording of incredibly long durations.

LCD display and playback modes

The DR-HD100 features a detailed LCD that displays system mode, time code and disk space remaining. When used with the GY-HD200 camcorder, clips can be reviewed on the viewfinder, LCD panel or external monitor, by using DR-HD100's playback mode. Functions include record, play, pause, stop, forward index, back index and multi speed fast forward and rewind.

BR-HD50 ProHD Recorder/Player



- DV and HDV recording
- Multi-format output and cross-converter function
- HDV 60Hz and 50Hz compatibility
- Standard DV & Mini DV compatible mechanism
- DV CAM playback capability
- Auto error correction system
- Sweeper heads
- HDMI OUT
- RS-422A interface
- IEEE 1394 interface
- Versatile analog connectors

Optional accessories & related equipment

CAMCORDER OPTIONS

1/3" High quality zoom lens



■ HTs18x4.2BRM

1/3" Wide zoom lens



■ Th13x3.5BRMU

1/3" Zoom lens



■ Th17x5BRM

1/3" MD Zoom lens for video conferencing



■ Th17x5BMD

1/3" High quality zoom lens



■ KT20x5BKRS

Lens mount converter



■ ACM-17 (2/3" → 1/3")
■ ACM-12 (1/2" → 1/3")

Wide converter



■ WCV-82SC
for use with the Th16x5BRMU

16mm film lens adapter



■ HZ-CA13U

IDX V-mount battery



■ VL-2PLUS (Charger)
■ Endura E-7S (Battery)
■ JVC-PV (Battery plate)

Anton Bauer battery



■ Dionic 90 (Battery)
■ Titan70 (Adapter)

Microphone



■ MV-P615U

Remote control units

6-pin DIN



■ RM-LP55U (Handheld)
■ RM-LP57U (Desk mount)

Manual zoom control



■ HZ-ZS13BU
Cannot be used for HTs18x4.2BRM lens.
Use Fujinon ZMM-6; Module unit/C2H-14;
Grip/CFC-12-990; Cable/MCA-7; Mounting clamp
■ HZ-ZS100U (Handle zoom)

Manual focus control



■ HZ-FM13U* (Fujinon)
■ HZ-FM15U (Canon)
*The HZ-FM13 cannot be used for S14 and Th16 lenses.
Use Fujinon FMM-8; Module unit/CFH-3;
Grip/CFC-12-990; Cable

Tripod base



■ KA-551U

ProHD TAPES MiniDV



■ M-DV63PROHD
ProHD tapes (miniDV size)
■ M-DV12CL
MiniDV cleaning tape

HARD DISK DRIVES



■ DR-HD100-40 (40GB - 3-1/2 hrs typical)
■ DR-HD100-80 (80GB - 7 hrs typical)

HD MONITORS

DT-V Monitors — CRT



■ DT-V1710CG (17")
■ DT-V100CG (10")

DT-V Monitors — LCD



■ DT-V24L (24")
■ DT-V20L (20")

GM-H Monitor — LCD



■ GM-H40L (40")

System configuration

