

Canon

Mini DV



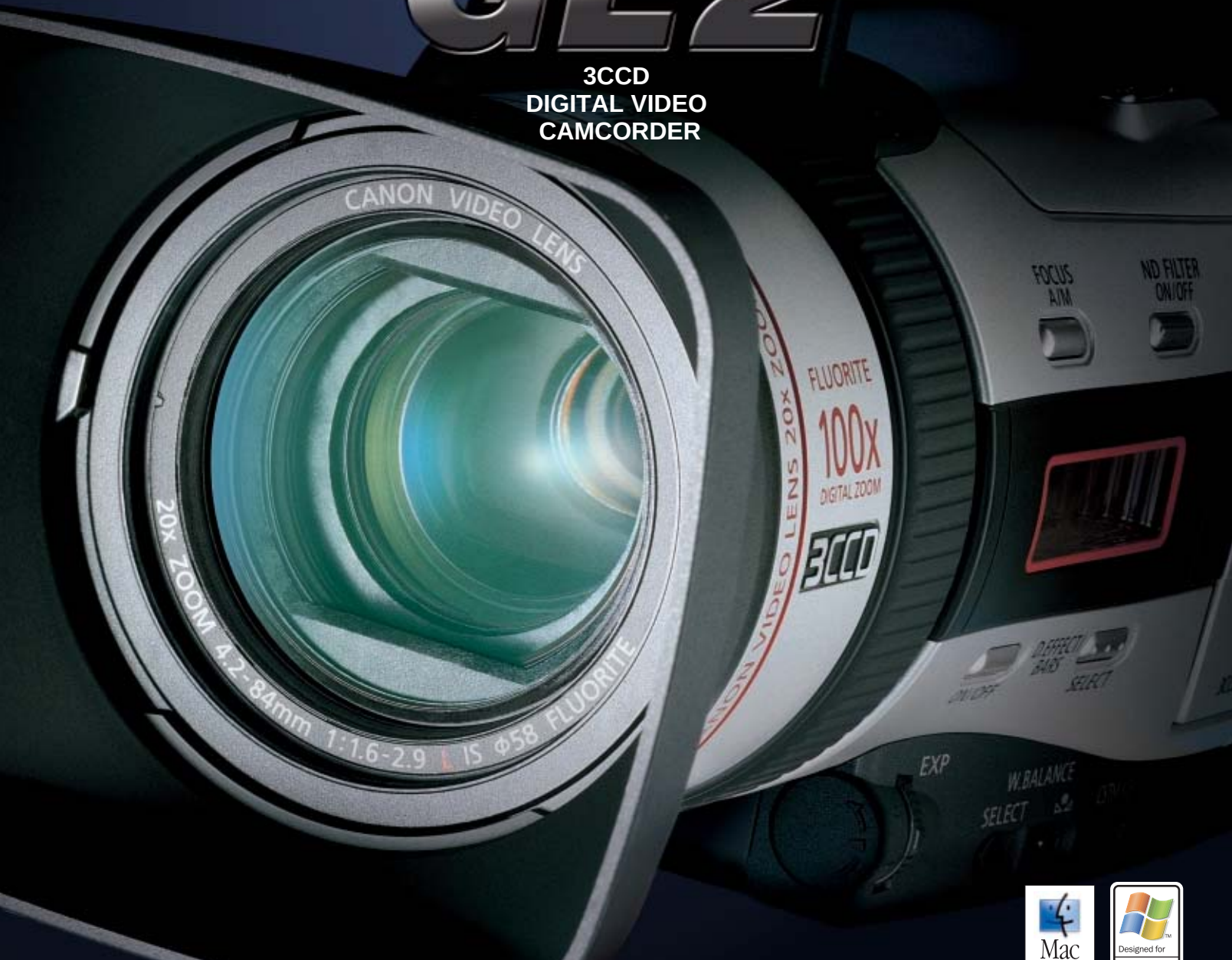
Precision-Engineered
Genuine Canon
Video Lens

**Go Digital
Go Canon**

Create Your Vision

GL2

3CCD
DIGITAL VIDEO
CAMCORDER



www.canondv.com



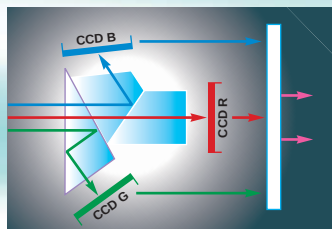
Incorporating precision optics, superior digital processing, and a sleek innovative design, the Canon GL2 offers reliable professional performance. Offering the highest level of control, the camera fully compliments one's vision and passion for excellence. Its advanced feature set allows users to handle even the most challenging tasks with confidence and ease.

Achieve Super High Resolution in Video and Still Image Recording

3CCD

The GL2 maximizes the capability of the DV format by using a 3 CCD system assigning a separate CCD to each primary color (red, green, blue). A beam-splitting prism precisely separates the light passing through the lens into individual color components, and each is sent to its own CCD. This process achieves outstanding detail with highly accurate color reproduction suitable for the demands of the high-end production field - wide dynamic range, low color noise, natural color resolution and low aliasing.

3CCD



Pixel Shift

Canon solves common shooting dilemmas by using a signal processing technique called Pixel Shift, which has been used in professional grade video cameras for many years. It achieves wider dynamic range, reduced vertical smearing and sharper digital still images.

PIXEL SHIFT

The green component of a video signal contains 60% of the picture detail, and the red and blue components comprise only 40%. The green CCD in the GL2 is shifted vertically and horizontally the equivalent distance of 1/2 pixel from the red and blue CCD. The green signal is then sampled more frequently to extract the maximum picture detail from the video signal. This allows the GL2 to achieve resolution equal to camcorders with nearly twice as many pixels in video recording.

Professional L-Series Fluorite Lens

Canon has satisfied the demands of experienced image makers for years through the power, design and quality of 35mm and broadcast TV lenses. Our Professional L-Series lenses utilize Fluorite, a material which provides outstanding resolution, contrast and color reproduction, especially in lightweight, high-magnification lenses. Now incorporated into the lens on the GL2,

Fluorite delivers the ultimate clarity and image quality. The Fluorite element inside of the lens defeats color aberration - the effect when components of light stray from one another within a lens, causing a reduction in sharpness, contrast and color. Our Fluorite lens precisely controls components of light providing an excellent balance of these three critical ingredients of picture quality. This is unobtainable with conventional optical glass.

Conventional
optic lens

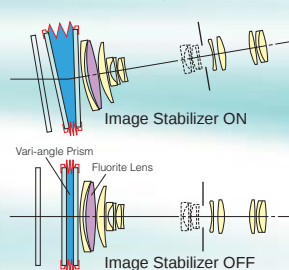


Fluorite
lens

Optical Image Stabilizer

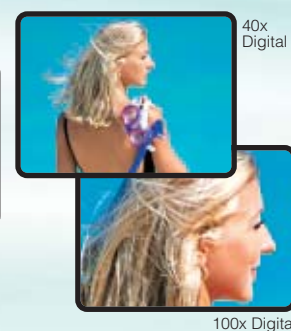
Canon's superb optical stabilization system corrects camera shake instantly so even hand-held shots, at full telephoto, and shots taken from a moving car, are smooth and steady. And since it is optical, there is no loss of image quality inevitable with electronic image stabilizers. It perfectly complements the high picture quality of the DV format.

**OPTICAL
IMAGE
STABILIZER**



20x Zoom Lens with 100x Digital Zoom

The GL2 incorporates a 20x Professional L-Series Fluorite optical zoom lens which transforms distant subjects into dramatic close-ups. The 20x optical zoom is the 35mm focal length equivalent of 39.5 to 790mm. The digital zoom, capable of extending to 40x and a maximum of 100x, provides sharper detail compared to others thanks to Canon's superior lens quality. You'll reveal details too distant to be seen with just the eye alone. At full telephoto the 35mm focal length equivalent is an amazing 79,000mm. Add the optional WD-58H Wide-converter to increase the field of view by 0.7x for indoor shots or panoramic views.



20x Zoom

Optical
wide angle

100x Digital

The Ultimate In

16:9 Aspect Ratio

The GL2 is equipped with two 16:9 aspect ratio methods.

16:9 Guides

The 16:9 guides are thin white lines, which appear in the display only. They let you view a 16:9 wide screen composition while in the standard 4:3 aspect ratio, which is especially helpful if you're planning to transfer your DV footage to film.

16:9 Recording Mode

The GL2 includes a 16:9 recording mode, which applies an electronic anamorphic stretch allowing you to fill the frame of a 16:9 wide screen TV.

3 Shooting Modes

The GL2 has three shooting modes to accommodate any of your recording needs.

Normal Movie Mode

By merging Canon's superior lens quality with 3 CCDs, the GL2 delivers stunning resolution and color reproduction - some of the best images outside of a TV studio. This mode records video in the standard interlaced fashion similar to conventional camcorders. Normal Movie Mode is ideal for recording video which appears smooth and natural during playback on a TV or video editing computer.

Digital Photo Mode

(1.7 Megapixel High Resolution Photos)

The GL2 features newly developed image processing, for capturing crisp, high-definition photos. Images may be captured in a choice of different image qualities and compression sizes to

suit your needs. Capture up to 10 stunning 1.7 megapixel (1488 X 1128 pixel) images onto the included 8MB SD Memory Card. Images may be also captured at VGA (640 X 480 pixel) in standard or fine compression. For added flexibility, you may take up to 700 still pictures on a Mini DV single tape (in SP mode). The camera records the still pictures for approximately 6 seconds, as well as recording the sound for your verbal notes or narration. You can search through the recorded tape for your photos using the supplied remote control.

Frame Movie Mode

This mode captures video in a unique non-interlaced method allowing the GL2 to record 30 frames of video per second. Similar to a motor drive on a 35mm camera, Frame Movie Mode performs like a Digital Motor Drive. You'll capture every gesture and expression of your subject with spectacular clarity. It's perfect for users who choose to grab high quality still images from video for making prints, video for website content, or even sending emotionally charged images over the internet. The non-interlaced method has even been acknowledged by users for its cinematic-like appearance.



Mini DV Digital
Video
Cassette

Digital Video



High Performance

DV format

Whether your need is broadcast production or simply the very best picture quality, the Mini DV format delivers more than 540 lines of horizontal resolution – nearly a 25% improvement in picture quality over the best analog formats. The tape formulation is advanced to last longer and even withstand repeated use without failure, virtually eliminating drop out, delivering higher output and less noise.



USB Terminal*

Allows high speed transfer of memory card data to computers mounting the USB terminal. By using the USB cable and software provided, you can process and organize still images on your PC. The camcorder functions as a memory card reader/writer. Bundled software: ZoomBrowser EX (Windows) / ImageBrowser (Macintosh). You can easily download, browse, archive and retouch still images. Automatically resize images and attach them to e-mail, arrange them for printing, and add text anywhere on the page.



IEEE1394 DV Terminal

The GL2 is equipped with a DV IN/OUT terminal that conforms to IEEE1394. It takes just a single digital cable to transfer or copy your videos in pure digital form to your DV compatible computer or another Canon DV camcorder. Once you've transferred video images to your computer, you can edit your movies, stream them over the Internet, or post them on your Web site. Also, you can print them out on a Canon color printer, transfer them back to your Canon camcorder and archive them on a Mini DV cassette, or create a dubbing master.



SD Memory Card and MultiMediaCard*

The GL2 expands video possibilities by using an SD (Secure Digital) Memory Card or a MultiMediaCard in addition to a Mini DV cassette. These ultra-small and ultra-light media record, store and manage still images, as well as allow easy transfer of still images to a PC with the camcorder. You can add a title made by yourself on the currently recording image on the cassette.

*An 8MB SD Memory Card is supplied with the camcorder.



MultiMediaCard

Gain Control

As well as automatic gain, the GL2 has settings for: 0dB, +6dB, +12dB, +18dB* for creative control in any shooting condition.

*card camera mode: 0dB, +6dB, +12dB



canon connects
plug and edit



Taken To a Higher Level

White Balance

White Balance can be set for Automatic, preset Indoors, preset Outdoors for any lighting condition.

AE Shift/AE Lock

By adjusting the AE Shift Control you can lighten or darken the image to precisely control the exposure level of the Program AE modes. In difficult lighting conditions, AE Lock allows you to lock exposure at the current level to control the brightness of the image.

Programmed AE

Puts advanced recording techniques at your fingertips to ensure great results in various shooting conditions. There are six programs in all, giving you the balanced control that you have come to expect from Canon.



Full Auto

Also called the "Green Zone". This is the ideal selection for general shooting.

Auto mode

Similar to Full Auto, Auto handles all camera settings automatically, but also allows the user to select manual functions (focus, exposure, white balance, for example).

Manual Mode

If you want to make all the decisions, this is the mode to use. Select your own combination of shutter speed, aperture and gain.

Spotlight

Designed to be used when subjects are illuminated by intense light sources, such as under spotlights on a dark stage. This mode is designed to prevent the subject from being grossly over-exposed, against a dark background.

Sand & Snow

This program is designed to prevent a dark, under-exposed subject when shooting in places with bright backgrounds, such as a sunny beach or ski resort.



Shutter-priority/Aperture-priority (Tv/Av)

The Tv and Av modes permit easy operation while retaining the creative image controls commonly found on Canon's 35mm SLR cameras. In the TV mode, select a shutter speed from 1/8 to 1/15,000* of a second and the GL2 will automatically set a matching aperture. In the AV mode, select an aperture from f/ 1.6 to f/8** and the GL2 automatically sets a matching shutter speed.

* card camera mode: 1/60 to 1/500 of a second

** card camera mode: f/2 to f/8



Tv Mode



Av Mode



Slow Shutter (Camera Mode)

Whether your aim is a "streaming" background when panning, or brighter recording in low light, you can choose from three slow shutter settings: 1/30, 1/15 and 1/8 of a second.

Picture Adjustment

Create a custom picture preset, and store it quick, creative control.

Color Gain

Adjust the saturation of the color between off to oversaturated. This adjustment allows you to shoot in black and white.

Color Phase

Adjust the Color Phase toward red or green for exact control.

Camera Sharpness

Adjust the range of picture sharpness to your preference before recording. Softer may compliment the subject while sharper will make details more visible.

Setup Level

Adjust the black level of the video signal for the best shadow detail.



[Red]



[Green]



Soft



Sharp



Clear Scan

The GL2 can be adjusted to match the frequency of a CRT monitor, allowing you to record it without rolling black bars.

SLR-Style Flash Photography

Attach a Canon Speedlite E-TTL flash (420EX or 550EX) to use the GL2 for flash photography, just like you would with an SLR camera. The camera sets the flash duration, sending out a pre-exposure flash to ensure correct exposure before the main flash is sent out.

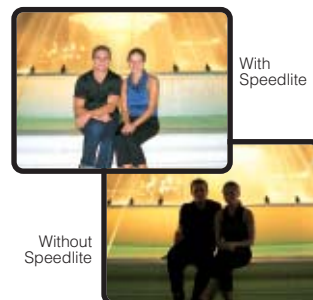


SMPTE Color Bars

The GL2 generates SMPTE color bars for accurate matching to your monitor or edit suite.

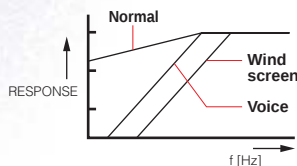
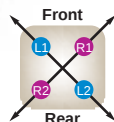
Zebra Pattern

Reveal areas of overexposure, using these diagonal stripes to guide you when setting the aperture and shutter speed. Select from five levels: 80, 85, 90, 95, and 100 %.



Direction Accurate Microphone

This microphone incorporates two pairs of pick-up elements each for left and right. This arrangement realizes a superior directional ability and fuller, richer stereo sound. Also, you can change the microphone frequency characteristics to match the recording condition (normal, voice, windscreen).



Manual Audio Control

For complete control, the GL2 offers 2 channel manual audio adjustment. The audio level can be monitored by an external illuminated VU meter or in the viewfinder/LCD view screen.

XLR Audio Inputs

The optional MA-300 Microphone Adapter is equipped with 2 XLR connectors for use with professional audio equipment and a BNC video connector.



PCM Digital Stereo Sound

The GL2 is complete with selectable audio modes; 16 bit and 12 bit. 16 bit, the highest quality, produces CD quality, two channel sound on one track. The 12 bit mode divides the audio track into two, recording two channels on one track while leaving the remaining track open for post production audio recording.



Interval Timer

With the interval timer, you can record for a selected time with selected interval. This function is convenient for nature observation such as flowers, sunsets, etc. You can select the interval time from 30 sec, 1 min, 5 min and 10 min, and the recording time from 0.5 sec, 1 sec, 1.5 sec and 2 sec.

Advanced Accessory Shoe

Simply slide on an accessory, and the shoe transmits power directly from the GL2. Choose to attach Canon's DM-50 Directional Stereo Microphone*, the stereo shotgun mic with high sensitivity and super-directional pick up. Or, attach the VL-3 Video Light*, which can either stay on continuously or turn on/off automatically in response to changes in the brightness of the shooting situation.

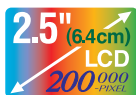
*Optional



Flexible LCD View Screen and Color Viewfinder

The 2.5" view screen makes it easier to compose sensational shots from any angle. It swivels and flips for maximum handling comfort and flexibility. It also tucks neatly away when bright shooting conditions make the eyecup* viewfinder the preferred way to shoot.

*A large eyecup is provided for glasses-wearing person.



VCR Stop

You can turn the recorder section off leaving the camera section turned on, so you can adjust the camera section without worrying about the Automatic shut-off (5-minute timer).

Custom Key

You can assign frequently used functions to the key (camera mode, Play(VCR) mode card camera mode and card play mode independently) to customize the camera to your shooting preferences or environment. You can assign the following functions to the Custom Key.



Camera mode

- Index Write •Zebra pattern
- VCR stop •TV screen •Mic
- Mic ATT •Zoom grip speed
- Zoom handle speed
- Audio level meter •AE shift
- Image stabilizer

Play(VCR) mode

- TV screen •Mic •Mic ATT
- Audio ATT •Audio level meter

Card camera mode

- Zebra pattern •TV screen
- Zoom grip speed
- Zoom handle speed •AE shift
- Image stabilizer

Card play(VCR) mode

- TV screen

Analog Line-In

For instant editing, simply connect your TV, VCR, or analog camcorder to the GL2 and send the analog signal directly to your computer's IEEE1394 terminal*, without recording to tape. If you choose, you may first record the analog signal to DV tape, allowing you to create a high-quality master of your original.



* The Analog-Digital Converter may not function depending on the software used.

DV Control

You can control the record and pause of equipment that conforms to the AV/C protocol connected to the GL2 using the DV terminal. For example, record to miniDV tape and a commercially available IEEE 1394 Controller and Hard Drive system simultaneously.

Time Code

This precisely identifies each recording down to the individual frame, showing the hour, minute, second and frame in the display. The GL2 uses a "drop-frame" system that is frame accurate.

Index Recording

You can mark "the best take" when you are shooting, for easy access when playing back in the VCR mode.

Photo Search/ Date Search/Index Search

The wireless controller included with the GL2 allows you to quickly locate still photos on a recorded cassette. Video can be searched based on the date recorded or by the index mark.

AV Insert and Audio Dubbing

Add a new scene into your video from another source such as a camcorder or VCR. (Your video must be recorded in SP mode.) You can also add a new stereo audio track onto your video such as a voice over or background music. (Your audio must be recorded in the 12 bit mode.)



LANC

The LANC terminal permits easy connection of compatible controllers or the Canon ZR-1000 Remote Control.

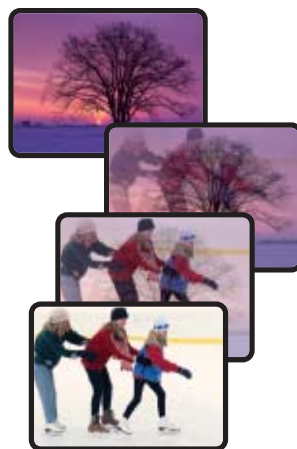
Digital Effects

The GL2 includes a selection of digital effects for a more appealing look and greater imaging variety.



Fader

Use the fader to start or end scenes with a fade to or from black such as the Fade Trigger, Wipe and Overlap.



Effects

Give variety to your images during recording by adding Black and White, Sepia, Strobe motion or Trail.

Data Code

Data code, which is recorded separately from the video signal, lets you display or hide data such as date, time, exposure etc. as required. This data can also be permanently "burned in" over the video for verification or surveillance purposes.

Top Grip With Recording Controls

In addition to the normal side grip, the GL2 features a carrying handle complete with a duplicate set of recording and zoom controls to better meet your individual recording style, as well as being ideal for low-angle recording.



Zoom Speeds

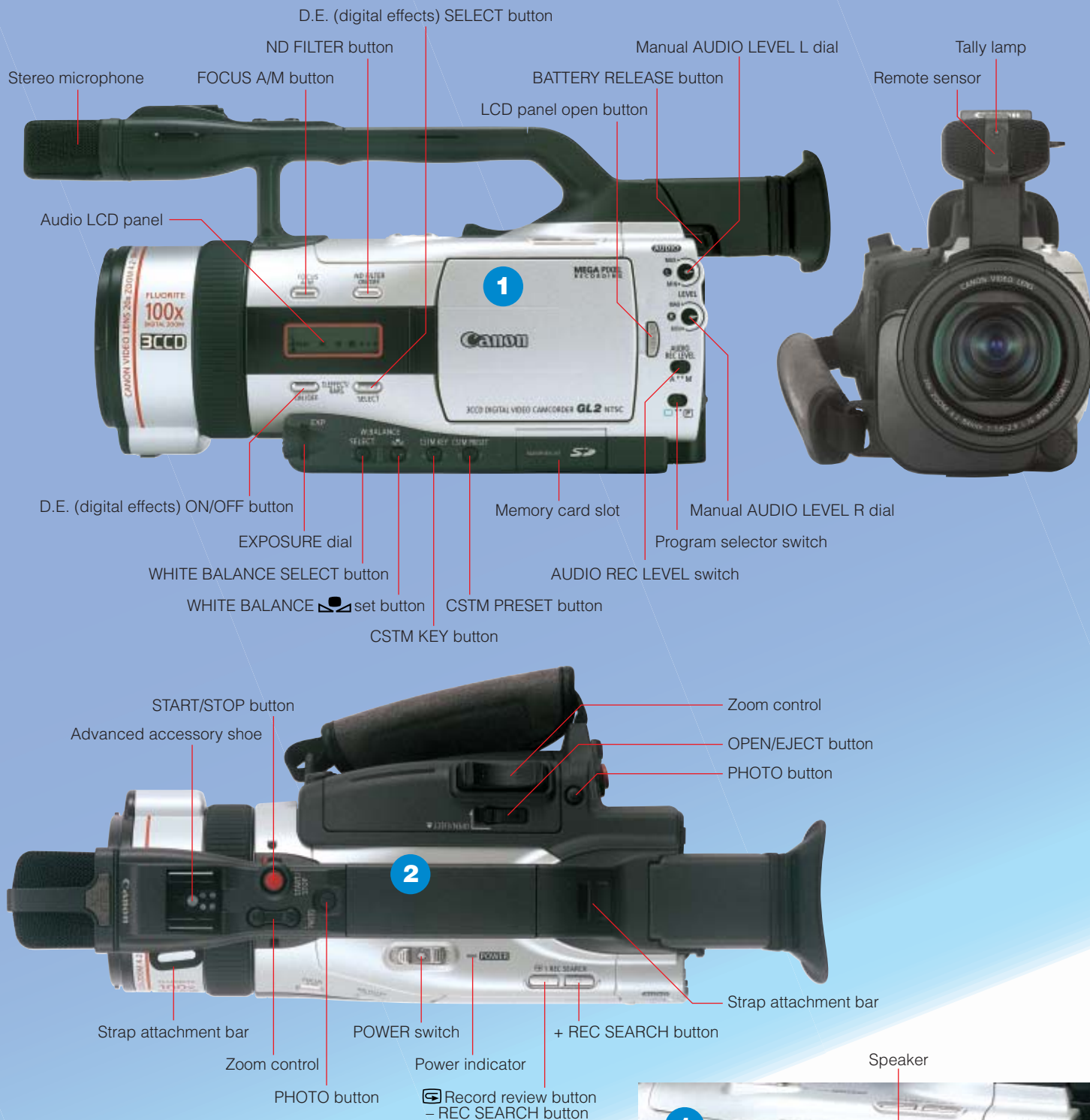
The GL2 is outfitted with 4 zoom speed options: Variable (pressure controlled) or Low, Medium and Fast. These apply to the zoom rockers on the handgrip and the top grip (3 zoom speeds).

- Built-in Speaker
- Headphone Terminal with Level Control
- Composite & S-Video input/output
- World Clock
- LP Mode (extends a 80 min. Mini DV tape to 120 min. or 60 min. tape to 90 min.)
- Lithium Ion Battery
- Self-Timer
- Zero Set Memory
- Remote Control

Pictures simulated



GL2 Nomenclature



*System requirements for software

Interface: USB: only preinstalled Windows 98/Windows Me/Windows 2000/Windows XP systems with built-in USB ports, or only systems equipped with genuine Apple-brand built-in USB interfaces.

Operating System	CPU	RAM
Windows	Windows 98	150MHz or better
	Windows Me/Windows 2000	32MB or more
	Windows XP	64MB or more
Macintosh	8.6-9.2	300MHz or better
	PowerPC	128MB or more
	Mac OS X (10.1)	20MB or more

Operating System	Free hard disk space
Windows	ZoomBrowser EX
	120MB or more
Macintosh	PhotoStitch
	40MB or more
Macintosh	ImageBrowser
	20MB or more
Macintosh	PhotoStitch
	30MB or more





STOP/INDEX SCREEN button

PLAY/PAUSE button

REC PAUSE button



REW/card- button

AUDIO DUBBING button

FF/card+ button

AV INSERT button

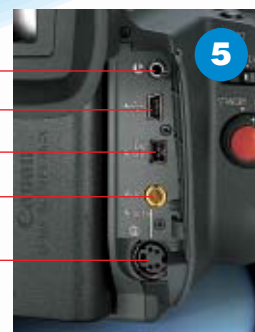
REMOTE terminal

USB terminal

DV terminal

Audio/video terminal

S-video terminal

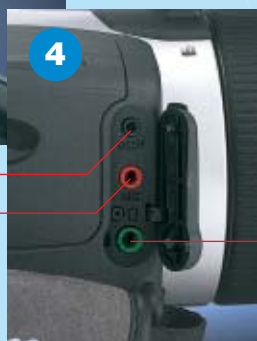


Infra-red signals transmitter



DC5V terminal

MIC terminal



(phones) terminal



Power Sources

Lithium Ion Battery Packs

A variety of one, two and three-level battery packs are available.

Battery pack	Maximum recording time using viewfinder	Maximum recording time using LCD screen
BP-915 (supplied)	2 hr.	1 hr. 35 min.
BP-930 (optional)	4 hr. 40 min.	3 hr. 55 min.
BP-945 (optional)	7 hr.	5 hr. 55 min.

When you attach two battery packs to the CH-910 Dual Battery Charger/Holder, the maximum recording time will be almost doubled.

CH-910 Dual Battery Charger/Holder

Holds two battery packs. Can charge them consecutively and connect directly to GL2 to give twice the playback time.

CB-920 Car Battery Adapter

To charge lithium ion batteries or power the camera from a car cigarette lighter socket. (Available soon)

Advanced Accessory Shoe



DM-50 Directional Stereo Microphone

Attaches to the shoe for cable-free operation. Picks up shotgun or shotgun + surrounding sound. Powered by the camcorder's power source. Wind shields included.

VL-3 Video Light

This 3W light attaches to the shoe for cable-free operation. Continuous on and auto on/off settings. Powered by the camcorder's power source.

MA-300 Microphone Adapter

The MA-300 allows attachment of 2 audio inputs with XLR connections and the addition of a BNC video connector.

Creative Shooting Accessories

WD-58H Wide-converter

Gives wide-angle coverage at 0.7X. (Lens hood included)

ZR-1000 Zoom Remote Controller

Plugs into the camcorder's LANC terminal and allows you to control functions such as record start/stop, zoom and focus while the camcorder is mounted on a tripod, without touching the camcorder body itself.

VL-10Li Battery Video Light

Powerful 10 W illumination. A lithium ion battery attaches directly, so operation is cable-free.



220EX/420EX/550EX Speedlite Flash

Attaches to the GL2 to give SLR-style flash photography.

Carrying Case



HC-4100 System Case

A solid and lockable system case that provides stylish protection during transportation and storage.

Canon Digital Videocassettes



DVM-E60/DVM-E80 Digital Video Cassette

DVM-CL Digital Video Head Cleaning Cassette

Availability differs from area to area.

GL2 Specifications

Power supply (rated): 7.2 V DC

Power consumption: 4.8 W (using viewfinder), 5.7 W (using LCD screen)

Television system: EIA standard (525 lines, 60 fields) NTSC color signal

Video recording system: 2 rotary heads, helical scanning system DV system (Consumer digital VCR SD system) Digital component recording

Audio recording system: PCM digital sound: 16 bit (48kHz/2ch), 12 bit (32kHz/4ch)

Image sensor: 3CCD 1/4" Pixel Shift (charge coupled device) 410,000 pixels (380,000 effective pixels)

Tape format: Videocassettes bearing the ("iX") mark.

Tape speed: SP: 3/4 ips (18.81 mm/s); LP: 1/2 ips (12.56 mm/s)

Maximum recording time: SP: 80 minutes (with a 80 min. cassette); LP: 120 minutes (with a 80 min. cassette)

Fast forward/rewind time: 2 mins 20 sec. (with a 60 min. cassette)

Lens: F/1.6-2.9, 20x power zoom, 4.2-84 mm

Focusing system: TTL autofocus, manual focusing possible

Minimum focusing distance:

3 ft 3 3/8 in (1 m), 3/8 inch (1 cm) on maximum wide angle

Maximum shutter speed: 1/15,000 sec (camera mode)

Minimum illumination: 0.37 lx (slow shutter at 1/6 of a second) (camera mode)

Recommended illumination: More than 100 lx

Filter diameter: 58 mm

Viewfinder: 0.44-inch, color LCD (approx. 180,000 pixels)

LCD screen: 2.5 in measured diagonally (6.4 cm), 200,000 pixels (approx.)

Microphone: Stereo electret condenser microphone

USB terminal: mini-B

DV terminal: DV 4 pin connector (based on IEEE1394)

Video terminal: 1 Vp-p/75 ohms unbalanced

S-video terminal: 1 Vp-p (Y signal), 0.286 Vp-p (C signal)

Audio terminal: Input level: -10 dBV (AUDIO ATT OFF), 0 dBV (AUDIO ATT ON)/47 kohms, unbalanced; Output level: 4 dBm, less than 3 kohms, unbalanced

Operating temperature range: 32 - 104° F (0 - 40° C)

Dimensions: 4 5/8 x 5 3/8 x 12 in (118 x 136 x 306 mm)

Weight: 2 lb 7 1/2 oz (1.12 kg)

Recording media: SD Memory Card, MultiMediaCard

Number of recording pixels: 1488 x 1128 pixels, 640 x 480 pixels

Image format: Design rule for Camera Format system (DCF), Digital Print Exif 2.2 compliant*, "Digital Print Order Format (DPOF) compliant (only images marked for printing)

* This camcorder supports Exif 2.2 (also called "Exif Print"). Exif Print is a standard for enhancing the communication between camcorders and printers. By connecting to an Exif Print-compliant printer, the camcorder's image data at the time of shooting is used and optimized, yielding extremely high quality prints.

File format: JPEG (compression mode: Fine/Standard)

Estimated SD Memory Card SDC-8M capacities (approx.):* 1488 x 1128: Fine 6 images, Standard 10 images 640 x 480: Fine 47 images, Standard 93 images

* The actual number you can record varies depending on the image.

THE CANON GL2 KIT



- GL2
- BP-915 Battery Pack
- CA-920 Compact Power Adapter
- DC-920 DC Coupler
- SS-650 Shoulder Strap
- WL-D77 Wireless Controller
- S-150 S-video Cable
- STV-250N Stereo Video Cable
- Lens hood
- Large eyecup
- SDC-8M SD Memory Card
- Software/USB Cable

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