XL2

Digital Camcorder

Item Code: 9549A001

Let Open Architecture open up a world of possibilities

The Canon XL2 allows you to capture images closer to the finished product than ever before. Work that previously was limited to post-production can be simply and effectively accomplished in the field, in the camcorder.

An Open Architecture philosophy, performance found only in much more expensive video cameras, Total Image Control and the solid foundation of Genuine Canon Optics, interchangeable lens capability and superb Canon image processing quality are united in the XL2.

The XL2 brings a host of performance and convenience features to this class of video camcorder-benefits that can't be found in this combination on other high-end video cameras. They include: Canon Super Range Optical Image Stabilization in the standard lens; dual aspect ratios; various frame rate capabilities; image gamma and detail controls; skin detail control and convertible LCD display among others.

Unprecedented image control coordination between two XL2 cameras, remote computer camera control and direct video recording to computer are just a part of the capabilities of the XL2. Never before has so much creative power been put in the hands of the film maker, video artist, and corporate and event videographer.

Features

16:9 and 4:3 aspect ratio shooting formats

With an increasing consumer shift toward widescreen TVs that deliver the full width of film-based theatrical movies, plus the resulting need for productions in the 16:9 aspect ratio, Canon's XL2 offers both the standard 4:3 aspect ratio and the 16:9 widescreen TV aspect ratio. Whether your production is standard video, cinema, wide-screen TV, and HDTV, the XL2 -- with menu-selectable aspect ration -- is your camera.

The 4:3 aspect ratio of the traditional TV screen is the most commonly used aspect ratio in broadcasting today. The 16:9 aspect ratio is the most common aspect ratio for film-based movies, and produces full screen playback on widescreen TVs. 16:9 is also the world standard aspect ratio for HDTV.

Variable frame rates

The demands being made on the video production community to be able to provide solutions under a multitude of different scenarios have been met with the Canon XL2. It delivers 60i, 30p, and 24p frame rates (24p with 2:3 and 2:3:3:2, both with 1/48th second shutter speed).

60i (interlaced) is the standard video frame rate that has been in use for decades; it's what you see on your home TV, whether from a broadcast signal, rented DVD, or home camcorder.

30p, or 30-frame progressive, is a non-interlaced format -- the same as Canon's Frame Movie Mode -- and produces video at 30 frames per second. Progressive (non-interlaced) scanning mimics a film camera's frame-by-frame image capture and delivers spectacular clarity for high speed subjects and a cinematic-like appearance. Shooting in 30p mode offers video with no interlace artifacts.

The 24p frame rate is also a non-interlaced format, and is now widely adopted by those planning on transferring the video signal to film. But film- and video-makers turn to 24p for the "cine" look even if their productions are not going to be transferred to film, simply because of the "look" of the frame rate. As well, the shutter speed of 1/48th per second is the standard shutter speed that movie cameras use. The combination of 24p frame rate and 1/48th perfectly mimic a motion film camera.

24p with 2:3 pulldown produces video with the look and motion of film. (24p, used in conjunction with a cine gamma curve on the XL2, produces images that have similar tonal characteristics as film.) This mode is used when the finished video is to be converted to 60i so that video can be viewed on a television. 24p with 2:3:3:2 pulldown is used when the video is to be transferred to film. The 2:3:3:2 pulldown allows editing software to extract true 24 frames a second.

Customizable Cine Look

The Canon XL2 lets users fine-tune the cine look of their video recordings using a number of variables: color matrix, gamma, knee, black stretch, vertical detail, coring, sharpness, noise reduction, color gain, and hue. Each variable can be adjusted independently, thereby giving you precise control over the “film-like” appearance of your video. Because Canon utilizes a 12 bit DSP (Digital Signal Processor) customized for the XL2, maximum image quality is preserved.

Color Matrix (Video/Cine)

The XL2’s Color Matrix function manages the hue and saturation of the video to reproduce the most accurate color. The color matrix defines the camera’s color output; the matrix lets you define the amount of primary and secondary colors that are produced. The primary colors are red, green and blue, with the secondary colors (cyan, magenta, yellow) made from the combinations of two primary colors. With the XL2’s Color Matrix, you can change from a video to a cine “look” for the end product.

Gamma (Video/Cine)

Gamma controls the general brightness (luminance) of the picture and the contrast of the picture. Adjusting gamma allows you to control the way the camera reproduces various tones. Video shot on the XL2 can be gamma corrected to allow for the final usage of the video -- where it will be shown. The display medium can distort the brightness, therefore if the gamma is corrected for the display medium when the video is shot, the display will show the correct brightness level. By switching to the Cine curve, the tonal qualities of the images produced have shading and coloration similar to that of film.

Knee (H/M/L)

Among the XL2’s picture-enhancing circuits is the knee circuit. Setting the control to high, medium or low manages the highlight compression of the video signal.

Black (Stretch/Normal/Press)

The XL2 gives the user control of the depth of black in dark areas of an image. To emphasize contrast in the video’s dark areas, “Stretch” is selected. To deepen or enhance the dark area, “Press” (compress) is selected.

Vertical Detail (Normal/Low)

There are 2 settings: “Normal” for vertical detail optimized for playback on an interlaced monitor, “Low” for vertical detail optimized for a progressive scan monitor like a PC.

Coring (-6 to +6)

The Coring function on the XL2 is useful in helping to remove image “noise.” Coring removes fine detail information that is not a major contributor to the picture detail but which adds noise to the image. You can adjust just how much detail information is removed -- just enough coring to reduce picture noise, but not enough to hurt the detail in the image.

Sharpness (-6 to +6)

The XL2 is capable of changing the degree of sharpness in the picture. By using this feature, pictures that do not require a lot of detail can be softened. This feature also can be used to hide imperfections during close-ups, for example. Increasing video sharpness can increase the video noise slightly.

Noise Reduction (OFF/H/N/L)

Noise Reduction removes video noise -- non-picture artifacts such as those commonly found in low-light images -- without hurting image detail or creating motion artifacts. This is important for two reasons. The first is that we have become used to viewing high quality video. The second is that video noise makes compression -- to DVD, for example -- less efficient.

Color Gain (-6 to +6)

The XL2 can deliver 13 steps of color gain, from off to oversaturated. This adjustment allows you to shoot in black and white.

Color Phase (-6 to +6)

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

Even Greater 3 CCD Performance

Building on the superior image quality associated with its industry-leading XL1 and XL1S camcorders, Canon has made a major step forward with the XL2. The XL2 continues to feature a 3 CCD system with a separate progressive scan CCD (charge coupled device) for each primary color (red, green and blue), with each CCD containing 680K pixels.

With the XL2, a beam-splitting prism separates light passing through the lens into individual color components and each is sent to its own CCD. Compared to a single CCD, the three CCD system achieves outstanding detail with highly accurate color reproduction suitable for the demands of high-end video production: wide dynamic range, low color noise, high-contrast detail, natural color resolution and low-aliasing.

But the system now features even higher resolution, delivering outstanding picture quality, highly accurate color reproduction and a wide dynamic range with virtually no color noise. The three CCD image sensors are specifically designed to capture as much image detail as possible and for shooting under extremely low light conditions. In super low light, the XL2 captures crisp and clear digital data. Under extremely bright conditions, the XL2 greatly reduces vertical white streaks and smears, making it a consummate field recording device for all conditions.

16:9: 960x480 effective pixels (460,800 pixels per CCD, total 1,382,400)

4:3: 720x480 effective pixels (345,600 pixels per CCD, total 1,036,800)

Total Image Control

Professional videographers need to have control over the set-up of their camcorder, including complete automatic setting to fine adjustments of: Master RGB, Setup Level, Master Pedestal, Skin Tone Detail, Program AE, Gain, AE Shift and Lock, White Balance, Shutter Speeds, Aperture Control, Zebra Patterns Clear Scan and Interval Timer. Because Canon utilizes a 12 bit DSP (Digital Signal Processor) customized for the XL2, maximum image quality is preserved.

Master RGB (R: -6 to +6, G: -6 to +6, B: -6 to +6)

The Master RGB control offers 13 steps of adjustment each to the red, green and blue components of the video signal.

Setup Level (-6 to +6)

Setup level adjusts the standard point of the black level of video signal. In USA (NTSC) the black level is set for 7.5 IRE, in Japan (NTSC) the black level is set at 0 IRE, for PAL and SECAM systems the black level is set for 0 IRE. Professional cameras use 3 IRE for the black level. The XL2 has a 13 step adjustment, with the default mid level being 3 IRE.

Master Pedestal (-6 to +6)

The Master Pedal controls the starting point of the gamma curve. This will change the dark areas of the picture.

Skin Tone Detail

Hue, gain, area, Y level (+/- 6 steps). During setup EVF shows a zebra pattern over masking area flashes between picture and white-mask. During setup EE and IEE1394 out flashes between picture and zebra pattern, enabling you to easily smooth out skin blemishes and wrinkles with total control.

Program AE (Auto, TV, AV, Manual, Spotlight, Low Light, Green)

Gain (-3 / A / 0 / +3 / +6 / +12 / +18 dB)

Control the amount of gain to balance between quality and getting the shot.

AE Shift

With the XL2, you may want to make slight adjustments to the image brightness to compensate for backlighting or for scenes that are being rendered slightly overexposed. When in Auto, TV or Av Modes, you can engage AE Shift in the camera menu, then turn the menu dial to add or subtract a bit of exposure. There are 13 steps available for creative control.

AE Lock

You can hold the exposure at a particular setting by engaging AE Lock on the XL2. This prevents unplanned exposure changes with a moving subject, for instance.

White Balance (Indoor, Outdoor presets and 3 user settings)

The XL2 uses an electronic white balance process to calibrate the picture for accurate color display in different lighting conditions (i.e. sunlight versus indoor incandescent). Automated white balance settings include a fully automated mode, an indoor mode and an outdoor mode. (When the XL2 is set to Green Mode, white balance is fully automated and cannot be adjusted.) In addition to these set standards, the XL2 lets you set the white balance manually by selecting manual select, then pointing the camera at a white object (such as a sheet of paper) that fills the field of view. The XL2 gives you the option of setting and saving as many as three white balance presets that can be reused for non-sequential shooting. Manual white balance works best for dominant color or monochromatic scenes and close-ups, in rapidly changing lighting conditions and in places lit by certain fluorescent or mercury vapor lights. White balancing should be performed prior to any recording.

Shutter Speeds

In 60i and 30p modes there are 30 shutter speeds as well as clear scan shutter speeds. In 24p there are 29 shutter speeds including 1/48th second and clear scan shutter speeds.

Aperture Control

There are 23 aperture settings available with the 20x lens. This setting can be adjusted in 1/4 steps.

Zebra Patterns (100%, 95%, 90%, 85%, 80%)

Zebra stripes, displayed in the viewfinder but not recorded, can be made to appear over any area that is overexposed. This black and white zebra stripe feature is activated via the camera's menu. Use this feature to guide the adjustment of the aperture and shutter speed. The zebra pattern settings that are available in the XL2 are: 80 IRE, 85 IRE, 90 IRE, 95 IRE, and 100 IRE.

Clear Scan

The Clear Scan feature allows you to record a computer CRT screen or similar equipment without displaying a black band or flicker on the screen. The XL2 can adjust shutter speeds from 60 Hz to 202.5 Hz, allowing you to perfectly match the CRT's scan rate.

Interval Timer

By selecting the Interval Timer on the XL2, the camera can be programmed to record at various intervals for varying amounts of time. This provides time lapse motion videography.

Set intervals include: 30 seconds; 1 minute; 5 minutes; 10 minutes. Set recording times include: 0.5 second; 1.0 second; 1.5 seconds; 2.0 seconds.

XL Mount Interchangeable Lens System

A key feature of the Canon XL-series camcorders is the XL mount interchangeable lens system. Unlike other systems, the XL2 offers users the ability to change lenses. This gives the producer/director the choice of the XL series of video lenses, third-party cine lenses, or even Canon's extensive range of photographic lenses. It also makes the XL2 the only MiniDV format camcorder with this feature.

Within the Canon XL system alone there are four lenses: the new 20x OIS, 16x OIS, 16x Manual, and 3x Wide. With an XL system adapter, the entire range of Canon photographic lenses is available -- a tremendous boon to those shooting for such productions as wildlife and nature documentaries. Other companies also offer a variety of specialty cine lenses that can be used on the XL2..

Fluorite Zoom Lens with Optical Image Stabilization

Canon has satisfied the demands of experienced image makers for years through the power, design and quality of 35mm and broadcast TV lenses. Canon continues that tradition with the new 20x Professional L-Series Fluorite optical zoom lens for the XL2. The lens uses fluorite, a material that provides outstanding resolution, contrast, and color reproduction, especially in lightweight, high-magnification lenses. The fluorite element inside the lens defeats color aberration an effect that causes a reduction in sharpness, contrast and color. It precisely controls components of light providing an excellent balance of these three critical ingredients of picture quality. The unsurpassed image quality is unobtainable with conventional optical glass.

The XL2's lens is the equivalent of a 42.3mm -- 846mm lens on a 35mm still camera, when the XL2 is recording in 16:9 widescreen format. When recording video in the TV-standard 4:3 aspect ratio, it is the equivalent of a 51.8mm -- 1036mm lens on a 35mm still camera.

In addition, the XL2 features Canon's superb Super Range Optical Image Stabilization (OIS) system (VAP type). The system corrects camera shake instantly so that even hand held shots at full telephoto and shots taken from a moving car are smooth and steady.

Previously, optical image stabilizers have used a gyro sensor to detect camcorder vibration. The data from the sensor would control a vari-angle prism that continuously corrected the path of the incoming light. Super Range goes one step further by examining the image after it is received by the CCD to detect any low-frequency vibrations missed by the gyro. This data is fed back to accelerate and refine the movement of the vari-angle prism. This greatly improves performance for low frequency vibration, resulting in the most advanced optical image stabilization available today.

And since the XL2's OIS system is optical, there isn't the loss of image quality that is inevitable with electronic image stabilizers. It perfectly complements the high picture quality of the DV format.

f/1.6 - f/3.5

Canon's 20x Professional L-Series Fluorite lens features a fast aperture of f/1.6, variable to f/3.5 at full telephoto. This maximum aperture of f/1.6 aids in capturing quality video in low light conditions.

72mm filter thread

With a standard 72mm filter thread, the 20x Professional L-Series Fluorite lens offers the availability of a wide variety of filters from Canon and other suppliers.

6 blade iris diaphragm

A six-blade circular iris is used in the XL2 for professional exposure control. This helps to deliver stunning video and still photos.

2 independent ND filters

The 20x Professional L-Series Fluorite optical zoom lens includes two neutral density filters to help control light -- for example under bright, sunlit conditions, or when less depth of field is desired. The two built-in filters, 1/6 ND and 1/32 ND, can be used independently.

Electronic focus and zoom ring

The focus ring and the zoom ring are independent controls on the 20x lens. They are servo controlled and the speed can be changed by the speed of the rotation of the ring. There is also a zoom control on the handgrip and one on the top handle.

Zoom preset position

This function allows memorization of a zoom point, so that the lens can return to that framing by a push of the button. The speed of the zoom can easily be controlled.

Focus preset position

This function allows memorization of a focus point, so that the lens can return to that focus by a push of the button. A ‘pull focus’ can easily be accomplished. The speed of the focus can easily be controlled.

Focal Lengths using the XL2

Lens	4:3 aspect ratio	16:9 aspect ratio
New 20x Lens	51.8 ~ 1036	42.3 ~ 846
16x OIS	52.8 ~ 844.8	43.1 ~ 689.6
16x Manual	52.8 ~ 844.8	43.1 ~ 689.6
3x Wide	32.6 ~ 97.8	26.6 ~ 79.8

SMPTE time code

The Canon XL2 offers many on-camera enhancements to help capture high-quality footage, including features commonly found on broadcast camcorders. Among these is the placement of a SMPTE time code on the tape. SMPTE (Society of Motion Picture and Television Engineers) time code is a digital signal that assigns a number to every frame of video, representing hours, minutes, seconds, frames, plus some additional information. The SMPTE time code is used to identify a precise location on a video tape, a mainstay of professional editing allowing all tape and equipment to work together for precise editing.

With this feature, the XL2 conforms with industry standards and is fully integrated with today's production equipment. The camera lets you choose Drop, Non-Drop, Rec Run and Free Run modes. It also provides User bit settings which allow the inclusion of reel number or other user data.

The XL2 also generates SMPTE color bars with 1 KHz tone (-12dB and -20dB). SMPTE color bars with tone are the standard method of setting up video and audio monitors, as well as edit suites, before recording and playback, and for adjustment purposes. Using a lead-in of color bars for 10-60 seconds has become a standard in professional film and video production. The color bars also can be used during shooting to allow the adjustment of reference monitors. The XL2 can generate color bars on tape prior to shooting; this allows for fast hand-off to the professional broadcast and/or film post-production environment.

Custom Presets

Three custom presets allow you to store several camera adjustments, then retrieve them with the touch of a button for faster and easier camera operation. Among the adjustments are: color gain, color phase, sharpness, setup level, V detail, color matrix, gamma, knee, black stretch, skin detail (hue, gain, area, Y level). This feature lets you save the settings of a particular look that you've established for your video so that you can duplicate it even after another set up.

Using the IEEE1394 connection, these custom presets can be transferred to or stored on another XL2 or a computer (with the appropriate third party software). They can then be reloaded to the original XL2 when needed.

Professional Audio Connections

Canon knows that audio is crucial to professional productions -- and the XL2 provides the highest standards in audio capture available in a digital video system with a 16-bit, 2-channel recording option. The XL2 also has two additional 12-bit recording channels. This allows simultaneous recording on four channels. The XL2 permits both automatic and manual control of audio levels.

Two built-in XLR connectors with phantom power (+48V) are designed for use with professional condenser microphones. This balanced connection allows for the use of very long cables without the introduction of outside noise.

BNC connectors are used in professional and broadcast video applications. These connect a two-wire coaxial cable using a bayonet mount.

MA-300 microphone adapter

For more creative control, Canon offers the optional MA-300 microphone adapter, which easily connects to the XL2's Advanced Accessory Shoe and powers without wires. The MA-300 lets you connect two professional XLR connector microphones in addition to the two connections on the camera body.

Microphone

The XL2 uses a high quality stereo electric condenser microphone.

All audio setup by switches under audio door

Input selection and attenuation.

XLR gain up adjustment

This feature is available through the menu system.

VU meters: side body and EVF

Headphone plug

Metal construction with level control.

Open Architecture Design

You can customize the XL2 to fit your specific application and preferences through a full range of accessories. They include optional lenses, viewfinders, mounts and microphone adapters.

Additional Features

Multi-functional Color EVF with 2” LCD Monitor

Having a fully adjustable Viewfinder is critical for getting that perfect shot. The XL2 has an EVF that is convertible between a standard eyepiece and a 2” high resolution LCD. The image is shown in 4:3 or 16:9 letterbox, depending on the shooting aspect ratio. The overlay information that normally disrupts clear viewing of the subject can be completely turned off, and a center crosshair can be turned on to mark the center of the image to help with framing. Unlike other EVF systems, viewfinder brightness, color, sharpness and contrast can be adjusted to suit individual shooting taste.

For total shooting comfort, the EVF can be mechanically adjusted left to right and forwards and backwards.

- Color EVF / 2” LCD convertible
- Right / left adjustment
- Before / aft adjustment
- Brightness, color, sharpness and contrast adjustments
- EVF LCD indicators: rec/shutter/gain
- Center cross hair (on/off)
- 16:9 shown as letter box
- EVF display (all, some, OFF -- same as XL1S)
- Body compatible with FU-100 B/W EVF (not with current color EVF)

Two Custom Keys

Two custom keys are available on the XL2, in both camera mode and VCR mode. These custom keys allow you to save your own custom settings so your common shooting modes can be readily duplicated. You select options from either the Camera Menu (Index Write, Zebra pattern, VCR stop, TV screen, Audio 1 in, Audio 2 in, Zoom grip speed, Zoom handle speed) or the VCR Menu (TV screen, Data code, Audio 1 in, Audio 2 in) and create up to two customized settings for each.

Advanced Accessory Shoe

When specific accessories compatible with the Advanced Accessory Shoe are attached, the XL2 can exchange data with them and supply power directly to them. These accessories include the VL-3 video light and DM-50 directional microphone. Also working with the Advanced Accessory Show is the MA-300 microphone adapter that lets you connect an additional two professional XLR connector microphones to the XL2. Simply slide the optional device into the accessory shoe; no external power or cables are required.

Zoom Control

- Color EVF / 2” LCD convertible
- Right / left adjustment

BNC/RCA/s-video terminals

With the XL2, Canon has added a BNC connector to the RCA connections and the S-video connection found on the XL1 and XL1S. The bayonet mount BNC connector is used in professional and broadcast video applications.

LANC terminal

The LANC (Local Application Control Bus System) is a remote terminal that allows you to connect the camera to LANC-compatible editing equipment.

DV Streaming

Not only can you capture high quality video with the XL2, you can stream it over the Internet. With streaming video, the content is compressed and encoded to make the file size smaller and more quickly transmitted. This lets the video be played as it is being received.

World Clock

Built-in shoulder pad

To make use of the XL2 easier, there’s a built-in shoulder pad. This makes extended use of the camera less physically demanding.

Dust gasket on tape door

To offer further protection to the tape, tape handling mechanism, and other internal components, the XL2 has a dust gasket on the tape door.

Wireless remote controller

The wireless controller supplied with the XL2 can operate the camera from a distance of up to 16 feet (5 m). Point it at either of the camera’s remote sensors while you press the buttons. (Remote sensors are located at both the front and the back of the camera.) The tally lamps light up to indicate the camera is in range and responding to remote control commands. Other than the standard on-camera functions, there are four functions that only can be operated using the wireless controller: Special playback, Data Code on/off, Self-timer. The remote sensor on the XL2 can be turned off to prevent interference from other Canon wireless controllers being used nearby.

Software - DVPC Recorder - only available to XL Owner’s Club members

Record directly to PC (XP only) -single file or individual scenes in different files. Compatible with any major editing programs -AVI-Type1 / AVI-Type2 file format.

Power Standby modes (VCR Power Same)

The XL2 has been designed to consume as little power as possible and comes with power saving features such as auto off features (activated after about 5 minutes of inactivity) to further extend battery power for field and remote work.

Specifications

Digital Video

Power Supply (rated)	7.2V DC (battery pack)
Power Consumption (While recording AF="ON")	7.1W (recording with AF, 20x zoom XL 5.4-108 L IS mounted)
Television System	EIA standard (525 lines, 60 fields) NTSC color signal
Video Recording system	Two rotating heads, helical scan azimuth recording, DV System (Consumer digital VCR SD system) digital component recording
Audio Recording system	PCM digital recording: 16 bit (48 kHz/2 channels); 12 bit (32 kHz/4 channels) Synchronous 4-channel recording is possible
Image Sensor	**Size 1/3", approx. 680,000 pixels (total), Progressive Scan CCD x3 (charge-coupled device) with horizontal pixel shift**
Tape Format	Video cassettes bearing the MiniDV mark
Tape Speed	**SP:** 0.74 ips (18.81mm/second) **LP:** 0.49 ips (12.56 mm/second)
Maximum Recording Time (with an 80-min. cassette)	**SP:** 80 min.
Maximum recording time	**LP:** 120 min.
Fast Forward/Rewind time	Approx. 2 minutes and 20 seconds (using 60-minute tape)
Lens Mount	XL interchangeable lens system
Focusing System	TTL autofocus. Manual focusing possible (20x zoom XL 5.4-108mm L IS installed)
Minimum Focusing Distance	20mm (Wide macro), 1m (entire zoom range): (20x zoom XL 5.4-108mm L IS installed)
Minimum Illumination	60i, 1/60 shutter speed = 5.5 lux; 30P, 1/30 shutter speed = 6.5 lux; 24P, 1/48 shutter speed = 10 lux
Recommended Illumination	More than 100 lx
Filter Diameter	72mm (XL lens)
Viewfinder	2.0-inch TFT color LCD; Approx. 200,000 pixels, RGB delta configuration
Microphone	Stereo electric condenser microphone
Total Pixels	**16:9 target area:** approx. 460,000 pixels (962 x 480) x3 CCD, 0.289" diagonal **4:3 target area:** approx. 350,000 pixels (720 x 480) x3 CCD, 0.236" diagonal
DV Terminal	4-pin connector (complies with IEEE1394); input/output switching
Video Terminal	RCA pin jack; input/output switching/BNC jack; input/output switching 1 Vp-p/75 ohms unbalanced

Output Levels	Max. -10 dBv (for 47 kohm load)/3 kohm unbalanced
S-video Terminal	4-pin mini-DIN; input/output switching 1 Vp-p/75 ohms (Y signal), 0.286 Vp-p/75 ohms (C signal)
Audio Terminal	RCA pin jack (L/R) 2 systems; input/output switching
Audio	Auto Mode, Gain 18dB
Input Levels	During input; Min. -10 dBv/47 kohms unbalanced
Microphone Terminal	3.5mm stereo mini-jack unbalanced -55 dBv (Auto), -67 dBv (Manual/Vol Max)/600 ohms
Operating Temperature range	32-104° F (0-40° C)
Dimensions	8.9 x 8.7 x 19.5 in. (225 x 220 x 496mm)
Weight (not including lens and battery pack)	5.3 lbs. (2410g)
Weight (fully loaded)	7.8 lbs. (3545g)

Note: Specifications are subject to change without notice. Weight and dimensions are approximate. Canon and Canon Know How are registered trademarks of Canon Inc. in the United States and may also be registered marks in other countries. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. Macintosh and Mac OS are trademarks of Apple Computer, Inc., registered in the United States and other countries. Other names and products not mentioned above may be registered trademarks or trademarks of their respective companies. Warning: Unauthorized recording of copyrighted materials may infringe on the rights of copyright owners and be contrary to copyright laws.

Supplies & Accessories

EF Adapter
The optional EF Adapter fits onto the XL2 allowing use of Canon EOS EF lenses for quality still imaging.

BP-930 Lithium Ion Battery Pack
Record for up to 90 minutes with the compact BP-930.The BP-930, an optional power pack, will deliver up to 135 minutes of power when using the viewfinder only or up to 130 minutes when using the LCD screen.

BP-945 Lithium-Ion Battery Pack
An optional accessory for the XL1S, the BP-945 can deliver over two hours of recording time using the color viewfinder.An optional accessory for the GL2, the BP-945 can deliver up to three-and-a-half hours of recording time using the viewfinder only or up to 200 minutes when the LCD screen is used.

CB-910 Car Battery Adapter
The CB-910 powers the camera or charges the battery by plugging into a car's cigarette lighter socket.

CH-910 Dual Battery Charger/Holder
The CH-910 holds two battery packs and can charge them one after the other. Once the batteries are charged, the CH-910, with batteries in place, can be clipped to your belt and then connected directly to a Canon Digital Camcorder. This will give you twice the recording time of just one battery. It can be used with any combination of Canon BP-900 series Lithium-Ion batteries.

FS-72U Filter Set
Includes Neutral Density (ND8), polarizing and ultra-violet filters. 72mm thread size. For use on all XL lenses except the 3D lens.

72mm Pro Mist Tiffen Filter
This filter is exceptional for creating a mood. Outdoors or indoors, in broad scenes or portraits. It is excellent for toning down excessive sharpness and reducing contrast by moderately lightening shadow areas without detracting from the overall image.

72mm BLK Pro Mist Filter
Tiffen Filter
Similar characteristics to Pro Mist, this filter also is great for toning down sharpness but provides a more subtle effect. Less lightening of shadows and reduction of contrast.

72mm Soft FX 2 Filter
Tiffen Filter
This filter is used for softening unwanted details while retaining overall image clarity. It is the ideal filter for shooting portraits.

72mm ND6 Filter
This filter eliminates overly bright, washed out images. It is excellent for providing balanced exposures and depth-of-field control. Absorbs 2 stops.

72mm ND3 Filter
This filter eliminates overly bright, washed out images. It is excellent for providing balanced exposures and depth-of-field control. Absorbs 1 stop.

MA-300 Microphone Adapter (2 XLR inputs)
Connects (2) XLR style microphones. It attaches to the camcorder's advanced accessory shoe, providing power and connections without any wires.

VL-3 Video Light
The VL-3 Video Light connects to the Advanced Accessory Shoe and is powered directly by the camcorder.

VL-10Li Video Light
The VL-10Li is a 10-watt video light for both indoor and outdoor use. It accepts a Lithium-Ion battery pack for power and is attached to the camera's accessory shoe.

Video Flash Light VFL-1
To be used with advanced accessory shoe combination video light & flash unit.

Zoom Remote Control ZR-1000
Controls Start/Stop, Focus, On-Screen, Record Search (+/-)

CB-920 Car Battery Adapter
The CB-920 powers the camera or charges the battery by plugging into a car's cigarette lighter socket.

Tripod Adapter TA-100
TA-100 Tripod Adapter allows you to quickly mount/dismount the XL2 on or from a tripod.

System Case HC-3200
A new system case, the HC-3200, is designed specifically to fit the XL2, complete with lens, standard microphone and viewfinder fitted. With a depth of almost 300mm, the case will also hold a range of other accessories in its base, making the package completely versatile.

Monochrome Viewfinder FU-1000

Kata Rain Cover
This KATA Rain Cover is tailored to fit the Canon GL2, effectively protecting it against rain and dust. It is made from a waterproof material with crystal clear vinyl panels on the camera's control side, enabling the use of the LCD monitor. Easy to use in a hurry, the cover slips quickly over the camera and is secured by drawstrings around the lens sleeve, microphone sleeve, and viewfinder sleeve. It is designed for efficiency down to the smallest detail and has been successfully tested under severe weather conditions.

STV-150 Mini Plug to RCA
A stereo Audio Video cable with RCA connectors.

EQ-XL1
Equalizer will provide wind noise protection to 40+mph with no db loss (dialogue) in the mid range with a fully balanced frequency response curve.

MM-XL1
This Mini-mount will provide a true foundation presence for high quality audio recording, effectively eliminating zoom motor drone and gear tap noise.The Mini-mount is a universal and modular type that enables you to instantly switch to any other mic -- up to 30mm in diameter.

CA-920 Compact Power Adapter
This is the standard charger and power source for the GL2. It will charge one battery at a time.

DC-Coupler DC-920
Combines with the CA-920 or CB-920

DVM-E60 Digital Videocassette
This tape allows the recording of 60-minutes of video in SP mode and 90-minutes in LP mode.

DVM-E80 Digital Videocassette
This tape allows the recording of 80-minutes of video in SP mode and 120-minutes in LP mode.

DVM-CL Digital Video Head Cleaning Cassette
This is used to clean the video head for a digital video camcorder.

FS-4 Replacement AC Adapter
Camcorder Accessory

AV Cable C-250
Connects mono audio and video to TV/VCR (RCA to Miniplug).

Mixing Microphone MM-100
Mixes live sound and mono music.

VL-20 Video Light
The VL-20 is a 20-watt video light for both indoor and outdoor use. It accepts a Lithium-Ion battery pack for power and is attached to the camera's accessory shoe.

Kata Case
Compact and lightweight, this carrying case provides excellent protection for the Canon GL2. The main compartment can be custom fitted with two padded partitions; an internal padded compartment on one side is perfect to store a charger, batteries, cassettes, etc. Two additional flat pockets are available: one internal and one external. Carrying options include a Padded Mesh Grip handle and a SPAD shoulder strap.

4-pin to 4-pin IEEE 1394 cable
Allows the connection of a digital video camcorder to a computer or another digital video camcorder.

STV-250N Mini Plug to RCA
Used to connect to a TV or VCR.

WS-20 Wrist Strap
Alternately, the WS-20 Wrist Strap will make sure you don't lose hold of your camcorder during life's more exciting moments.

FA-200 Flash Adapter
Enables you to use a Speedlite flash with the XL1.

Tiffen Steady Stick
This small, lightweight steady stick supplies support for the XL2 when shooting to give you that rock solid shot! Is can be broken down in size to allow easy transportation.

HC-3100 Carrying Case
A solid, lockable case that allows you to protect the XL1S and XL1 kit during transportation and storage. This is not a shipping case.

Shoulder Strap SS-600

Finder Unit FU-100

Film Adapter FP-100
Transfers 35mm film and slides to video, relays images to an AV-compatible PC, or displays images on TV.

Roller Case
This roller case allows for easy transportation and protection for your digital video camcorder.

Battery Pack (BP-950G)

Battery Pack (BP-970G)

S-150 Cable
Used to connect the camcorder to a TV or VCR with S-Video analog connection.

SA-1 Adapter Bracket
Attach an external microphone or VL-10Li with this optional adapter.

Kata Backpack
Backpack

Video Light VL-10Li II
A small, light and powerful video light for indoor and outdoor use. Rated at 10 watts, it accepts a Lithium-Ion battery pack for power and attaches to the XH G1 / XH A1's accessory shoe.

DM-50 Directional Stereo Microphone
Get near-professional quality sound for your movies with this shotgun stereo mic. Select from pure shotgun or shotgun + surrounding sound modes. Since the mic is powered by the camcorder's power source, you remain cable free. Wind shields are included.

20x ZOOM XL - 5.4 108mm L1S for XL2
20x professional L series Fluorite zoom lens. Zoom and focus presets. Super Range Optical Image Stabilization, (2) built-in ND filters, manual focus and zoom rings, and a Push AF button.

DC Coupler DC-905
Connects to the CA-900 or CB-900 Charger / Power adapter to provide power to the camcorder.

AV Cable C-150
Connects mono audio and video to TV/VCR (RCA to RCA).

Canon RC-72 0.8x Wide Angle Adapter for Ratio Conversion

Shoulder Strap SS-650
Compatible with all camcorders.

Shoulder Strap SS-200

Shoulder Strap SS-300

Can’t find the part or accessory you’re looking for? Customer Support can help.
Call 1-800-828-4040 for assistance.

What's in the Box

XL2 Kit Contents:

1. XL2 Camcorder Body
2. Zoom Lens 20x zoom XL 5.4-108mm L IS
3. Color Viewfinder
4. Lithium Battery (for Auto-Date)
5. WL-D4000 Wireless Controller
6. Two R03/AAA Batteries (for Wireless Controller)
7. Lens Cap
8. Lens Dust Cap
9. Lens Hood
10. Lens Soft Case
11. Camcorder Dust Cap
12. CA-920 Compact Power Adapter and Adapter Holder
13. AC Cable
14. DC-920 DC Coupler
15. BP-930 Battery Pack (with Terminal Cover)
16. SS-1000 Shoulder Strap
17. STV-150 Stereo Video Cable
18. S-150 S-Video Cabl
19. Microphone
20. XL2 and Lens Instruction manuals