THE BROADCAST QUALITY DIGITAL CAMCORDER
The Canon XL1s – Meeting the Highest Expectations

Canon pursued imaging greatness resulting in the ultimate digital camcorder system, the XL1s. It starts with a highly intelligent “open architecture” design, which allows you to customize your XL1s with the widest variety of optional accessories available. Plus, you have extensive control over picture and sound adjustments to tailor the “look and feel” of each recording to your preference or even your clients’. Whether you define yourself as an imaging enthusiast, professional videographer or digital filmmaker, there is a Canon XL1s digital camcorder configuration that’s just right for you.

• Premium picture quality and performance
• Enhanced manual functions for experienced users
• Wide variety of interchangeable lens
• Leading-edge audio technology
• Full manual zoom lens available
• User oriented interface
3 CCD
The XL1s 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.

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, brighter video in low light, reduced vertical smearing and sharper digital photos.

High Resolution Even In Low Light
The XL1s incorporates three CCD image sensors specifically designed for freedom when shooting under extremely low light conditions. The size of each pixel is 72 square microns. That's 150% larger than the pixel-size on comparable models. The result is approximately an overall 14 dB improvement in sensitivity.

Three Different Shooting Modes for All Your Recording Needs

Normal Movie Mode
By merging Canon's superior lens quality with 3 CCDs, the XL1s 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 with Self Timer
Take almost 700 brilliantly clear still pictures on a single tape (in SP mode). The photo mode further distinguishes the XL1s by capturing extremely high resolution still images. 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 XL1s to record 25 frames of video per second. Similar to a motor drive on a 35 mm 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 popularized by Canon's XL1s has even been acknowledged by users for its cinematic like appearance.
The Choice Is Yours…

The XL1s maximizes your options via the XL mount system for a focal length range from 24 to 2,160 mm. This super-flexible system with unbeatable range is made possible through the use of Canon’s XL and EF 35 mm camera lenses.

Optical Image Stabilized 16x Zoom Lens

This lens resolves over 600 TV lines to deliver an extraordinarily sharp image. By exceeding the DV standard of 500 TV lines, it provides greater visual “sharpness” through the critical 100 to 250 TV line resolution area. This lens also includes Canon’s “SuperRange” Variable Angle Prism for enhanced optical image stabilization plus a ND filter, manual focus and zoom rings and a Push AF button.

Manual 16x Zoom Lens

Perfect for the video application that requires precise manual lens control, this lens provides focus, zoom and aperture scales. Even more, it includes a powered zoom, automatic iris and two built-in ND filters.

3x Extra Wide-Angle Zoom

The 3x zoom lens provides the world’s widest field-of-view on any DV camcorder. The focal length is 3-4 mm to 10.2 mm (35 mm equivalent 24 mm to 72 mm) and the resolution exceeds 600 TV lines.

FS-72U Filter Set

Includes neutral density (ND 8), polarizing and ultraviolet filters.

1.6x Extender

Attach this extender between the XL1s camera and the Optical Image Stabilized 16x Zoom Lens or the Manual 16x Zoom Lens to increase the focal length magnification by 1.6x.

EOS Adapter for Image Magnification

The EF adapter allows you to attach Canon EOS 35 mm camera lenses to the XL1s. This is especially helpful for subjects such as sports, wildlife, surveillance and astronomy because the image magnification of any 35 mm lens is increased 7.2x when mounted onto the XL1s.
SuperRange Optical Image Stabilizer - The Most Advanced System Available

Until now, optical image stabilizers have used solely a gyro sensor to detect camcorder vibration (the data from which controls a vari-angle prism that continuously corrects the path of the incoming light). SuperRange goes one step further by examining the image after it is received by the CCD, and detecting 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. This feature is found only on Canon’s optical Image Stabilized 16x zoom lens.
1 Stereo microphone
2 Viewfinder focusing ring
3 Viewfinder
4 Eye cup
5 Shoulder strap attachment bar
6 ND FILTER switch
7 STABILIZER switch
8 LIGHT button
9 AUDIO MONITOR button

10 POWER dial
11 EJECT button
12 Focusing ring
13 Zooming ring
14 Auto/Manual Focus switch
15 PUSH AF button
16 EXP. LOCK button
17 LENS RELEASE switch
18 GAIN dial

36 User Preset Select Button
37 User Preset (ON/OFF) Button
38 L/R dials (AUDIO 2)
39 LEVEL dial (AUDIO 1)
40 BALANCE dial (AUDIO 1)
41 AE Shift dial
42 Audio LCD panel
43 DC out terminal

44 Audio 1 RCA Jacks
45 S-Video terminal
46 Video terminal
47 RECORD SEARCH + button
48 EVF DISPLAY button
49 D. EFFECT on/off button
50 SHUTTER up key
51 SHUTTER down key
19 White balance selector knob
20 WHITE BALANCE set button
21 STANDBY button
22 Socket for Shoulder Pad SP-100, Microphone Adapter/Shoulder MA-100
23 Shoulder Pad SP-100
24 EYE POINT SELECT switch
25 START/STOP button
26 LOCK lever

27 Accessory shoe
28 Headphones terminal
29 PHONES LEVEL dial
30 Tally lamp
31 Remote sensor
32 Handle Zoom Control
33 PHOTO Button
34 Custom Key 1
35 Custom Key 2

52 RECORD SEARCH - / (record review) button
53 AV insert button
54 FF button
55 REW button
56 Audio DUB button
57 REC button
58 PLAY / PAUSE button
59 STOP button
Four Audio Channels

Four Channel Digital Audio for Recording Versatility
The XL1s records digital stereo sound. You can record 16 bit audio (2 channels, 48 kHz) or 12 bit audio (4 channels, 32 kHz). Audio level can be fully automatic or manually controlled and monitored by an illuminated VU meter. The XL1s also accepts Line or Mic level audio sources to ensure an accurate impedance match.

High Frequency Microphone
The XL1s comes complete with a high quality microphone that gives excellent performance in terms of frequency response.

Headphone Terminal
You can monitor the level and quality of the audio you are recording, to ensure the best quality.

XLR Audio Inputs
The optional MA-200 Microphone Adapter/Shoulder Pad is equipped with 4 XLR connectors for use with professional audio equipment and a BNC video connector. This unit also allows you to attach an optional, commercially available, wireless microphone receiver. Plus, it functions as a shoulder pad for advanced handling and control.

MA-200 Microphone Adapter/
Shoulder Pad
You can attach 4 mics with XLR-connector simultaneously and have the video signal by the BNC-connector.
Transfer your DV Footage to Film

16:9 Aspect Ratio
The XL1s is equipped with two 16:9 aspect ratio methods.

16:9 Guides
The 16:9 guides are thin white lines, which appear in the viewfinder 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 XL1s 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.

Ensures 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” and identified by the green rectangle on the Command Dial, this is the ideal selection for general shooting.

Auto mode
Similar to Full Auto, Auto mode handles all camera settings automatically, but also allows the user to select manual functions.

Manual Mode
If you want to make all the decisions, this is the mode to use. You can choose any combination of shutter speeds and lens apertures.

Programmed AE for Advanced Recording Techniques

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.

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, you select the shutter speed from 1/6 to 1/16000 of a second and the XL1s will automatically set a matching aperture. In the Av mode, you select the aperture from f/1.6 to f/16 and the XL1s automatically sets a matching shutter speed.
Four Different Picture Adjustment Modes

Up to three picture adjustment settings can be stored, allowing you 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 clearer.

**Setup Level**
Adjust the black level of the video signal for the best shadow detail. (Focus, exposure, white balance, for example).

**Clear Scan**
The XL1s can be adjusted to match the frequency of a CRT monitor, allowing you to record the monitor without rolling black bars.

**SMPTE Colour Bars**
The XL1s generates SMPTE colour bars for accurate matching to your monitor or edit suite.

**White Balance for Any Lighting Condition**
White Balance can be set for Automatic, preset Indoors, preset Outdoors and three Set memories, for any lighting condition.

AE Shift with Three Slow Shutter Settings
By adjusting the AE Shift Control you can lighten or darken the image to precisely control the exposure level of the Program AE modes.

**Digital Effects**
The XL1s is equipped with a 2x Digital Zoom to electronically increase the magnification of the image plus a Fade Trigger feature, which applies a black fade to the beginning or end of a scene.

**1 Fader**
Use the fader to start or end scenes with a fade to or from black.

**2 Effects**
Give variety to your images during recording by adding Black and White, Slim, Stretch or Strobe motion.

**Gain Creative Control**
As well as automatic gain, the XL1s has settings for –3 dB, 0 dB, +6 dB, +12 dB, +18 dB, and +30 dB for creative control in any shooting condition.

**Zebra Pattern Avoids Overexposure**
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%.

**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.

**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).

**Slow Shutter Settings**
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.
Custom Keys
You can assign frequently used functions to the keys (camera mode and VCR mode independently) to customize the camera to your shooting preferences or environment. You can assign the following functions to the Custom Keys.

**Camera Mode**
- Index Write
- Zebra pattern
- VCR stop
- TV screen
- Audio 1 in
- Audio 2 in
- Zoom grip speed
- Zoom handle speed
- No function assigned

**VCR Mode**
- TV screen
- Data code
- Audio 1 in
- Audio 2 in
- No function assigned

**Composite/S-Video In & Out**
The XL1s can be connected to any monitor by a composite (RCA) cable or by an S-Video cable. The same video terminals also accept video signals for recording from external sources such as a TV, VCR or another camcorder. The MA-200 adaptor has a BNC connector for connection to professional equipment.

**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.)

**DV Control**
You can control the record and pause of equipment that conforms to the AV/C protocol connected to the XL1s using the DV terminal. For example, record to a miniDV tape and FireWire Hard drive simultaneously.

**Time Code**
This precisely identifies each recording down to the individual frame, showing the hour, minute, second and frame in the display. The XL1s uses a “drop-frame” system that is frame accurate.

**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.

**Index Recording**
You can mark “the best take” when you are shooting, for easy access when playing back in the VCR mode.

**Ergonomics and Magnesium Body**
The XL1s camcorder is designed to support extensive field use. Its chassis is mounted on a single, durable magnesium alloy frame to provide overall strength and protection from external shock – blending twenty times the durability of ordinary camcorder bodies, with countless times the style. The layout and design of the controls and functions makes the XL1s ergonomically and practically a joy to use.

**Top Grip with Recording Controls**
In addition to the normal side grip, the XL1s 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.
Photo Search/ Date Search/ Index Search
The wireless controller included with the XL1s 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.

Three Zoom Speeds
The XL1s features three zoom speed options: Variable (pressure controlled) or Low, Medium and Fast. These apply to the zoom rockers on the handgrip and the top grip.

Wireless Remote Control
The XL1s kit includes a full function wireless remote control to manage features during recording and playback hands free.

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

Plug and Play!
IEEE 1394 DV Terminal
The XL1s is equipped with a DV IN/OUT terminal that conforms to IEEE 1394. 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.

The Canon XL1s KIT
• XL1s Camcorder Body
• Zoom Lens 16x 5.5-88 mm IS
• BP-930 Battery Pack
• CA-910 Compact Power Adapter
• DC-900 DC Coupler
• SS-1000 Shoulder Strap
• WL-D3000 Wireless Controller
• SP-100 Shoulder Pad
• S-150 S-Video Cable
• STV-150 Stereo Video Cable
• Lens Hood

Optional Creative Shooting Accessories
Building on the modular design of the XL1s, Canon has a complete range of optional accessories to enhance every shooting situation.

ZR-1000 Remote Control
This optional wired remote control connects to the LANC terminal to operate the zoom speed, focus, recording, data display and other features, and attaches to most tripod handles.

CH-910 Dual Battery Charger/Holder
Holds two battery packs. Charges them consecutively and connects directly to the MA-200 adapter for longer recording time and better balance.

SLR-Style Flash Photography for Correct Exposure
Attach a Canon Speedlite E-TTL flash (420EX or 550EX) using the optional FA-200 Flash Adapter to use the XL1s for flash photography, just like you would with a 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.

FU-1000 Monochrome CRT Viewfinder Unit
With this monochrome CRT viewfinder unit, you can get more precise focus or detailed information.

• MA 200/100
• FS-72U Filter Set
• 3x Extra Wide-Angle Zoom Lens
• Manual 16x Zoom Lens
• 1.6x Extender
• EOS Adapter
### XL1s Specifications

#### General
- **Power Supply Voltage:** 7.2 VDC
- **Power Consumption:** Operating Temperature: 0°C to 40°C
- **Dimensions (W x H x D):** Approx. 223 mm x 214 mm x 415 mm
- **Weight (fully-equipped):** Approx. 2,860 g
- **Continuous Recording Time:** Approx. 1 h 55 min. with BP-930 battery pack

#### Camera section
- **Imaging Device:** 3 x 1/3-inch CCD (1 CCD Pixel Shift)
- **Shutter Speed (Tv mode):** 30 steps 1/6 to 1/16,000 sec.
- **Dimensions (W x H x D):** Approx. 1,700 g
- **Weight (camera only):** Approx. 233 mm x 214 mm x 415 mm
- **Lens:** EF Lens (with optional EF adopter XL)
- **Focus Override:** 72 mm
- **AF Operating Range:** 2 cm to infinity using XL 5.5-88 mm IS II
- **Film Mount Method:** Bayonet mount (XL mount system)
- **Eye cup:** Approx. +4.0 for M mode (50 mm distance)
- **Eyepoint:** Approx. 3.0 for M mode (20 mm distance)
- **Viewfinder:** Electronic viewfinder
- **Light Metering Method:** Lower center weighted + peak average light metering
- **AF Operating Range:** 7 mm (at eye)
- **AF: (Auto-focus):** TTL-video signal detection type AF
- **AF lock:** AE lock
- **AE lock button:** Y: 1/5 VP-v 75 ohm

#### Audio
- **Audio Input/Output Terminals:** RCA terminal jack (L/R) 2 systems
- **Signal Output:** Signal level 1 VP-p 75 ohm (composite)
- **Audio In:** 4 dBm (70 kohm load)/3 k ohms or less, unbalanced
- **Audio Out:** 12-bit ST1 mode
- **Audio Dubbing:** 3.5 mm dia. Stereo mini-jack

#### Video
- **S-Video Out:** C: 0.3 VP-p/75 ohm
- **Video In:** 4 dBm (47 kohm load)/3 k ohms or less, unbalanced
- **Flash Terminal:** Special 4-pin (IEEE1394 compatible)
- **Flash:** Special 6-pin

#### Recording Section
- **Operating Temperature:** 0°C to 40°C
- **Recording Time:** Approx. 2 min. 20 sec. (using 60-min. tape)
- **Time code:** Shutter / VCR stop
- **Index Search:** Photo search, Date search, Index search
- **Audio Input/Output Terminals:** XLR audio input
- **Video Input/Output Terminals:** XLR audio input
- **Audio Input/Output Terminals:** Recordable on tape
- **Power Source:** Approx. 68 mm (with sports viewfinder)

#### Lens
- **Focal length:** 2.6 x 10
- **Iris:** F0.7 to F4

#### Optical System
- **Super range optical system
- **Variable levels:** 80%, 85%, 90%, 95%, 100%
- **Zebra pattern:** -71 dBv

#### Shooting Modes
- **Shooting Modes:** Manual, Auto, Preset (3 positions), Preset (5600 k, 3200 k)
- **Effective:** 300,000 pixels

#### Other details
- **Power Supply Voltage:** 7.2 VDC
- **Power Consumption:** Using audio input during recording
- **Weight (fully-equipped):** Approx. 2,860 g
- **Continuous Recording Time:** Approx. 1 h 55 min. with BP-930 battery pack
- **Adjustment:** Brightness control Bright volume of EFP
- **Recording Section:** Manual
- **Audio Input/Output Terminals:** 4-channel: MA-200 (optional)
- **Audio Input/Output Terminals:** 2-channel: MA-100 (optional)
- **Audio Input/Output Terminals:** One Push AF button when AF is off
- **Audio Input/Output Terminals:** The tape-recorded with SP mode
- **Audio Input/Output Terminals:** On / Partly Off / Off
- **Audio Input/Output Terminals:** Format
- **Audio Input/Output Terminals:** Signal level 1 VP-p 75 ohm (composite)
- **Audio Input/Output Terminals:** Signal level 1 VP-p 75 ohm (composite)
- **Audio Input/Output Terminals:** -55 dBm
- **Audio Input/Output Terminals:** -55 dBm
- **Audio Input/Output Terminals:** -55 dBm
- **Audio Input/Output Terminals:** -59 dBm
- **Audio Input/Output Terminals:** One Push AF
- **Audio Input/Output Terminals:** Auto
- **Audio Input/Output Terminals:** Manual
- **Audio Input/Output Terminals:** NTSC format (525 lines, 29.97 frames/second)