SONY

HDW-650F

Three 2/3-inch Power HAD FX CCs HDCAM HD camcorder

Overview

Part of the widely adopted HDCAM family which offers many enhanced features over previous models

Ideal for content creation in prime-time TV, commercials, natural history and ENG.

Wide tonal reproduction

Incorporates three 2/3-inch type Power HAD FX CCDs, a 14-bit A/D convertor, and a state-of-the-art DSP LSI as well as a high sensitivity of F11 at 59.94 Hz or F12 at 50 Hz.

3.5-inch colour LCD screen

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Features

Three 2/3-inch HD Power HAD FX CCDs

Comes equipped with three _x0018_/3-inch type-megapixel HD CCDs, which are also used in Sony's well-proven HDC-1500 Multi-format HD Camera. Based on Sony's Power HAD FX sensor technology and the latest on-chip lens structure, the HDW-650F offers a high sensitivity of F11 at 59.94 Hz or F1_x0018_ at 50 Hz.

Superb signal-to-noise ratio of 59dB

An excellent signal-to-noise ratio of 59dB can be achieved by activating the Noise Suppression (NS) mode, which helps to

reduce the high-frequency noise elements of video signals using Sony's advanced digital processing technology.

Choice of HD recording formats, including 1080/23.98P

For both frame rates and scanning mode. In addition to 1080/50i and 59.94i, it also supports 1080/_x0018_3.98P.

14-bit A/D conversion

Incorporates a high-performance 14-bit A/D convertor that enables images captured by the high-performance CCDs to be processed with maximum precision. In particular, this high-resolution A/D conversion allows the gradation in mid- to dark-tone areas of the picture to be faithfully reproduced. Thanks to the 14-bit A/D convertor, pre-knee signal compression in highlighted areas can be eliminated, and the camera can clearly reproduce a high-luminance subject at a 600% dynamic range.

3.5-inch 2 LCD

A large, easy-to-view, colour LCD screen on the camcorder's side panel enables operators to instantly review recorded footage – as well as access the camera's set-up menus, and view status indications such as four-channel audio meters and the remaining time available in the tape and battery.

New audio capability: digital wireless microphone receiver

Compatible with a range of microphones. It is equipped with a slot to accommodate the DWR-S01D digital wireless microphone receiver, which provides two-channel audio with stable and secure transmission tolerant to interference waves. The WRR-855S wireless microphone receiver can also be utilised by installing it to the slot. Shotgun-type microphones, such as the ECM-680S/678/674, are also available as options. Moreover, the status of the digital wireless microphone system can be monitored through both the camcorder's viewfinder and the LCD

display.

Well-balanced compact body
The ergonomic design provides excellent weight balance, allowing users to enjoy comfortable hand-held operation. Because its centre of gravity is located roughly at the centre point of the shoulder pad, operating the camera for long periods on the shoulder causes less operator fatigue. The HDW-650F's light body weighs just 4._x0018_kg (9 lb 4 oz).

Down-conversion capability
Equipped with a built-in down-conversion system as standard. Conversion can be done via SD-SDI output. This function provides powerful operational flexibility.

Picture cache recording
Offers a picture cache recording function that is especially useful for various tape saving applications. Up to eight seconds of audio and video signals are buffered in the camcorder's memory before the Rec. start button is even pressed (when in Standby mode). This means that everything that happened eight seconds before the Rec. start button was pressed will still be recorded in the tape. What's more, this function works even before the tape is inserted into the drive – thereby helping to prevent the loss of any unexpected, yet important events.

Specifications

General	
Power Requirements	DC 12 V +5.0 V/-1.0 V
Power Consumption	Approx. 35 W (with 12 V DC supply, when recording, LCD monitor off)
	Approx. 9 lb 4 oz (without options)

Mass	Approx. 5.9 kg (with VF, Mic, BCT-40HD, BP-GL95) Approx. 4.2 kg (without options) Approx. 13 lb (with VF, Mic, BCT-40HD, BP-GL95)
Operating Temperature	32°F to 104°F 0°C to 40°C
Storage Temperature	-4°F to 140°F -20°C to +60°C
Operating Humidity	25% to 85% (relative humidity)
Continuous Operating Time	Approx. 120 min with BP-GL95 battery (When using an optional HDVF-20A and operating at the normal temperature of 25°C (77°F).)
Dimensions (W x H x D) *[1]	5 x 10 5/8 x 13 1/8 inches 124 x 269 x 332 mm

Camera Section

Pickup Device	3-chip 2/3-inch type IT CCD
Effective Picture Elements	1920 x 1080 (H x V)
Optical System	F1.4 prism system

Lens Mount	2/3-inch 48 bayonet mount
Built-in Filters	A: Cross, B: 3200K, C: 4300K, D: 6300K 1: Clear, 2: 1/4 ND, 3: 1/16 ND, 4: 1/64 ND
Sensitivity (2,000 lx, 89.9% reflectance)	F11 (59.94i), F12 (50i) (typical)
Minimum Illumination	0.08 lx (F1.4 lens, +42 dB gain, 32-frame accumulation)
Smear Level	-135 dB (typical)
Video S/N Ratio	64 dB (Noise suppressor max.) 54 dB (Noise suppressor off)
Modulation Depth	45% or more (at 27.5 MHz)
Registration	0.02% or less (excluding distortion due to lens)
Geometric Distortion	None identified (excluding distortion due to lens)
Horizontal Resolution	1,000 TV Lines
Shutter Speed	1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 sec (50i) 1/32, 1/48, 1/50, 1/60, 1/96, 1/125, 1/250, 1/500, 1/1000, 1/2000 sec (23.98PsF)

	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 sec (59i)
Clear Scan	60 Hz to 4300 Hz (59i) 50 Hz to 4700 Hz (50i) 24 Hz to 2200 Hz (23.98PsF)
Programmable Gain	-6 dB/-3 dB/0 dB/3 dB/6 dB/9 dB/12 dB/18 dB/24 dB/30 dB/36 dB/42 dB
LCD Panel	Pixel resolution: 250,880 pixels 3.5 inches

VTR Section

Recording Format	HDCAM 59.94i/50i/23.98PsF
Tape Speed	Approx. 96.7 mm/s (59.94i) Approx. 80.7 mm/s (50i) Approx. 77.4 mm/s (23.98PsF)
Recording/Playback Time	50 min (23.98PsF) with BCT-40HD 48 min (50i) with BCT-40HD 40 min (59.94i) with BCT-40HD
Fast Forward/Rewind Time	Approx. 5 min with BCT-40HD
Recommended Tapes	HDCAM cassette (S) BCT-6HD/12HD/22HD/32HD/40HD

Sampling Frequency	Y: 74.176 MHz (59.94i), 74.25 MHz (50i), Pb/Pr: 37.088 MHz (59.94i), 37.125 MHz (50i)
Quantization	10 bits/sample (8 bits sample for compression processing)
Channel Coding	S-NRZI PR-IV
Compression	Coefficient recording system
Error Correction	Reed-Solomon code
Error Concealment	Adaptive three dimensional

Input/Output	
Genlock Input	BNC (x1), 1.0 Vp-p, 75 Ω, unbalanced
Timecode Input	BNC (x1), 0.5 V to 18 Vp-p, 10 kΩ
Audio Input (CH1/CH2)	XLR-type 3-pin (female) (x2), -60 dBu/+4 dBu/AES/EBU (0 dBu = 0.775 Vrms)
Mic Input	XLR-type 5-pin (female) (x1), -50 dBu (LPF ON)
Test Output	BNC (x1), VBS/Y (component): 1.0 Vp-p, 75 Ω, unbalanced

HD-SDI Output	BNC (x1), 0.8 Vp-p, unbalanced
HD/SD-SDI Output	BNC (x1), 0.8 Vp-p, unbalanced
AUDIO Output	XLR-type 5-pin (male) (x1), 0 dBm
TC Output	BNC (x1), 1.0 Vp-p, 75 Ω
Earphone Output	Mini jack (x2), 8 Ω, -∞ dBs to -18 dBs variable
DC Input	XLR-type 4-pin (male) (x1), DC 11 V to 17 V
DC Output	4-pin (x1), DC 11 V to 17 V, Max. 0.5 A
Lens	12-pin (x1), DC 11 V to 17 V, Max. 0.7 A
Remote	8-pin (x1)
Light	2-pin (x1)

Supplied Accessories

Supplied Accessories	Shoulder strap (1) Operation manual CD-ROM (1) Operation manual (1)

Notes

Note	*[1] The values for dimensions are approximate.

Gallery

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