SONY

You and DVCAM – the ideal partnership.

DVCAM™

DSR-450WSP/DSR-400P

3CCD Digital Camcorders

www.sonybiz.net/dvcam

Adding a New Level of Quality, Creativity and Robustness to DVCAM Acquisition – the **DSR-450WSP** and **DSR-400P**

DSR-450WSP/ DSR-400P

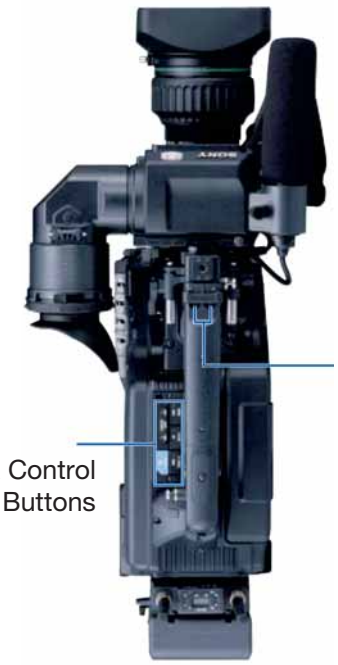
Sony have continuously enhanced their DVCAM™ Series of products since the introduction of their earliest models. Each one offers state-of-the-art technology designed to meet specific customer needs in applications from video journalism and event videography to newsgathering and independent movie making.

With DVCAM applications on the increase, Sony presents the DSR-400P and DSR-450WSP Digital Camcorders – the ultimate DVCAM camcorders. Packing the latest CCD and digital-processing technology into a newly-designed, heavy-duty chassis, these camcorders provide the ruggedness, convenient functions and operational comfort that the DVCAM format has demonstrated in the field time and time again.

The cost-effective DSR-400P adopts three 2/3-inch type Power HAD™ EX CCDs with a 4:3 aspect ratio. It offers new exciting features such as a swing-out 2.5 inch* type colour LCD monitor, Memory Stick™ slot, user assignable function buttons and battery-remaining display function for added operational convenience and creative versatility.

The widescreen DSR-450WSP adopts three 2/3-inch type Power HAD EX CCDs with a 16:9 aspect ratio to shoot in both 16:9 and 4:3 aspect ratios. In addition to the DSR-400P features, the DSR-450WSP further offers 25P progressive mode, selectable gamma with a film-like gamma setting and a slow shutter feature – unique functions that enable even greater shooting creativity. The DSR-450WSP also supports an 8-pin remote-control feature as standard and SDI output and analogue composite input capabilities with the use of two optional boards. The DSR-400P and DSR-450WSP herald a new level of quality, reliability, versatility and convenience for the best results in DVCAM acquisition.

* Viewable area measured diagonally



Rear Connector Panel for the DSR-450WSP

Rear Connector Panel for the DSR-400P

Two Models Designed to Meet Specific Customer Needs in a Variety of Applications

DSR-450WSP & DSR-400P Common Features

Camera Features

2/3-Inch Type Power HAD EX CCD

The DSR-450WSP and DSR-400P are equipped with proven state-of-the-art three-chip 2/3-inch type Sony Power HAD EX CCDs. This CCD imager achieves a high sensitivity of F11, an excellent signal-to-noise ratio of 63 dB and a remarkably low smear level of -140 dB (typical), allowing the DSR-450WSP and DSR-400P to produce pictures of stunning quality.

12-Bit A/D Conversion

The DSR-450WSP and DSR-400P incorporate a high-integrity 12-bit A/D conversion circuit so that images captured by the Power HAD EX CCDs are processed with great precision. This high-resolution A/D conversion allows the contrast to be reproduced faithfully in both mid-to-dark tone and bright areas of the picture.

Advanced Digital Signal Processing (ADSP)

A key to quality in DSP cameras is how many bits are used in their non-linear process, such as gamma correction. The ADSP of the DSR-450WSP and DSR-400P uses more than 30 bits in its nonlinear process, minimising round-off errors to maintain the high quality of the Power HAD EX CCDs. The ADSP also enables highly sophisticated image controls such as the multi-matrix function, triple skin tone detail control and adaptive highlight control.

Recorder Features

DVCAM/DV Selectable Recording

The VTR sections of both the DSR-450WSP and DSR-400P use the Sony DVCAM format, which provides the video and audio quality and the reliability essential for professional use. Thanks to an 8-bit component digital recording with a 5:1 compression ratio and a sampling rate of 4:2:0, these camcorders provide excellent picture quality, superb multi-generation capabilities and excellent production flexibility. The DSR-450WSP and DSR-400P can use both mini-size (PDVM Series) and standard-size (PDV Series) cassettes. If you need a longer recording time, the DSR-450WSP and DSR-400P can also record and playback DV format signals (SP mode only)*1, affording a maximum recording time of 276 minutes when using the PDV-184 ME standard-size cassette.

*1 The transition from cut to cut may not be as smooth when recorded in DV (SP) format, or when the recording format is changed from DV to DVCAM (or vice versa) in-between scenes. This is a normal and expected phenomenon.

High-Quality Audio Recordings

Audio can be recorded in either 16- or 12-bit resolution. The recording format provides two channels in 16-bit mode and four channels in 12-bit mode. Two channels can be recorded in either 48 kHz/16-bit or 32 kHz/12-bit mode by the camcorder. If recordings are made on two channels in 32 kHz/12-bit mode, then another two channels are available for use with a studio VTR.

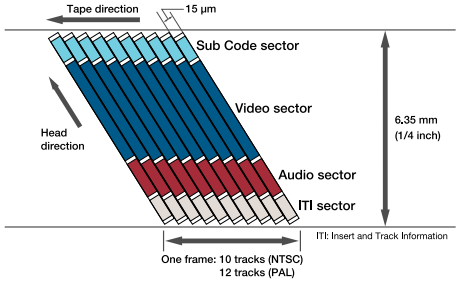
Digital Output to External Devices

The DSR-450WSP and DSR-400P are equipped with a 6-pin i.LINK™ *2 interface (DV output only) for digital signal output. This enables recording to compatible DV and DVCAM VTRs using just one i.LINK cable, which simultaneously carries digital video/audio and control signals. For example, connect the DSR-450WSP or DSR-400P to the Sony DSR-2000AP Studio VTR, and simple cut editing can be performed without signal deterioration. For backup recording, connect to a Sony DSR-50P portable DVCAM recorder and control its REC On/Off function remotely with the REC On/Off button of the DSR-450WSP or DSR-400P.

*2 i.LINK is a Sony trademark used only to designate that a product is equipped with an IEEE 1394 connector. Not all products with an i.LINK connector may communicate with each other. Please refer to the documentation that comes with any device having an i.LINK connector for information on compatibility, operating conditions and proper connection.

Quick FF/REW Capabilities

The DSR-450WSP and DSR-400P can fast-forward and rewind tapes at extremely high speeds. They can fast-forward and rewind the PDVM-40ME mini-size cassette in approximately 40 seconds and the PDV-184 ME standard-size cassette in approximately 2 minutes and 30 seconds.



Track Pattern of the DVCAM Format

The DSR-450WSP and DSR-400P can use both mini-size (PDVM Series) and standard-size (PDV Series) cassettes.

DSR-450WSP with a PDV-184ME Cassette Inserted

Operational Convenience

Rugged and Ergonomic Design

The design of the DSR-450WSP and DSR-400P is based on years of Sony experience in camera ergonomics and provides high mobility, balance and physical robustness. The viewfinder, switchers and indicators, as well as a swing-out LCD monitor are logically placed for optimum functionality and easy use. Rear-panel connectors are located well away from the battery pack, making it easy to connect cables. The DSR-450WSP and DSR-400P truly take user-comfort to new levels.

Compact, Lightweight and Low Power Consumption

The DSR-450WSP and DSR-400P are designed to be very compact and lightweight for a high level of mobility in the field. They weigh approximately 6.5 kg (14 lb 5 oz) including the DXF-801 viewfinder, microphone, BPGL65 battery, mini-size DVCAM cassette and VCL- 917BY lens (supplied with the DSR-400PK package). With a new generation LSI, these camcorders achieve a low power consumption of approximately 17 W (with the DC 12 V power supply, REC mode, viewfinder off and LCD monitor off).

User-friendly Menu Controls

The DSR-450WSP and DSR-400P offer an easy-to-use menu system to facilitate detailed camera settings. Setup parameters are well organised in a two-layer menu system: a user menu and a sub menu. The user menu allows access only to the standard setup functions needed by the camera operator and can be customised for fast access to the menus they use frequently.
The sub menu makes all menus accessible, each of which is categorised into groups such as operation, paint, maintenance, file and diagnosis. Menu pages can be displayed in the camcorder viewfinder and LCD monitor as well as on an external monitor screen via the monitor output and the menu control system can be operated easily using a rotary switch on the camcorder.

1 Optical ND Filter and Electric CC Filter

Optimum light and colour control is easily achieved using an optical ND (Neutral Density) filter wheel and electronic Colour Correction. The use of electronic Colour Correction allows all filters in the filter wheel to be of the ND type, providing the operator with greater flexibility in depth-of-field and exposure control.

2 Battery-remaining Display

With a Sony Professional Info Battery, the remaining capacity is automatically detected and transmitted. The remaining capacity is indicated in the camcorder viewfinder and LCD monitor in 10% steps.

3 Intelligent Light System

To operate using the camcorder battery, an optional portable light (maximum 50 W) can be attached to the camcorder using a standard lighting connector and specially designed short cable. The light can be switched on and off manually, or automatically synchronised with the camcorder's REC start function.

4 2.5-inch Type*1 Colour LCD Monitor

The DSR-450WSP and DSR-400P include a swing-out colour LCD monitor with a resolution of 214,000 pixels, allowing users to view the input source during recording, or to check the playback picture on location. Status indications such as time code, two-channel audio level metres and tape- and battery-remaining capacity can also be displayed, as well as camera set-up menus.

*1 Viewable area measured diagonally.

5 Assignable Function

Functions frequently used in the field, such as markers, ATW, recording review, record start/stop and turbo gain functions, can be assigned to four Assign Buttons (push buttons), allowing the operator to make rapid changes when working in the field.

Turbo Gain

The Turbo Gain function boosts the gain level up to +36 dB at the touch of an Assign Button. This makes it possible to shoot in extremely low-light conditions. The gain level of the Turbo Gain function is selectable.

6 Camera Adaptor for Wireless Microphone Receiver

The optional CA-WR855 is an adaptor which holds a Sony WRR-855B Wireless Microphone Receiver. It can be directly attached to the DSR-450WSP or DSR-400P via a V-shoe attachment, providing a direct connection interface for audio/power. A Lithium Ion Battery Pack can also be attached to the rear panel of the CA-WR855 via a V-shoe attachment, allowing for easy battery replacement even when the WRR-855B is mounted. The camcorders can also accommodate the WRR-862B Wireless Microphone Receiver using the A-8278-057-A Mounting Bracket (service part).

7 Adjustable Shoulder Pad

The position of the shoulder pad can be adjusted backward or forward - without using a screwdriver – to provide operators with a comfortable and well-balanced camera.

8 Memory Stick System Stores Camera Setup Parameters

The DSR-450WSP and DSR-400P incorporate the Sony Memory Stick system for the storage and recall of setup parameters. This is an easy, effective system for storing and recalling camera parameters for individual scenes, as well as individual operators' camera setup preferences including assignable button settings.

9 Supplied DXF-801 Viewfinder

The DXF-801 Viewfinder is a 1.5-inch*4 type black-and-white viewfinder supplied with the DSR-400P and DSR-450WSP and includes the following features:

*4 Viewable area measured diagonally

- Automatic scan-size switching between 16:9 and 4:3 (DSR-450WSP only)
- VF light (LED) – lights up the iris ring area of the lens for operation in dark conditions (high/low/off)
- Display switch – turns off character superimposition on the viewfinder
- Tally lamp levels (high/low/off)
- Vertical and horizontal detail level control via peaking potentiometer
- Two red REC tally lamps
- Diecast aluminium body
- Wide range of diopter adjustments

Intelligent Light System

2.5-inch Type Colour LCD Monitor

Adjustable Shoulder Pad

The Memory Stick media is an optional accessory

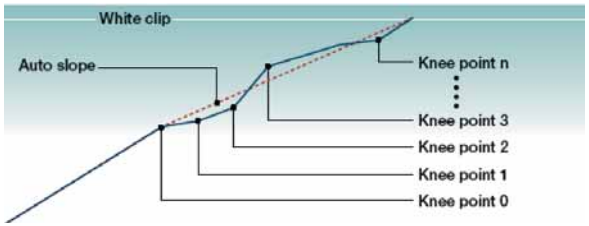
Conventional Video Equipment

TruEye

Simulated images

Multi-matrix ON

Simulated images



Knee Curve Image

Creative Versatility

TruEye Processor

The Sony TruEye™ processor is one of the most innovative features of Sony digital signal processing technology. This technology makes it possible to virtually eliminate hue distortion, particularly obvious in high light conditions that result from conventional RGB analogue or digital processing. By processing the video signal data at three levels – brightness, hue and saturation – similar to how the human eye works, the TruEye feature assists in the reproduction of natural skin tones.

Adaptive Highlight Control

The DSR-450WSP and DSR-400P provide multiple knee-points/slopes for superb overexposure control. The camcorder analyses the high light areas of a scene and automatically sets and optimises multiple knee points/slopes accordingly. This allows for the reproduction of extremely difficult images (such as an interior scene that includes a brightly sunlit window) with much more overexposure latitude. This function applies only to input video levels in excess of the knee point; the middle- and low-luminance parts of the video signal are unaffected by this control.

Triple Skin Tone Detail Control

The DSR-450WSP and DSR-400P come equipped with a Triple Skin Tone Detail Control function, which allows for independent detail control over three specified colours. This enhances the capability of Skin Tone Detail correction, enabling one colour selection to be used for reducing the detail level of skin colour and two other selections to be used for either increasing or decreasing the detail level of two other objects.

Variable Black Gamma Range

The Variable Black Gamma Range function allows for fine adjustment of tonal reproduction in the shadow area. This feature can help to bring out details from the dark parts of the picture without affecting midtones while maintaining the absolute black level. The variable range is LOW, low MID, high MID and HIGH.

Auto Tracing White Balance (ATW)

The DSR-450WSP and DSR-400P offer an Auto Tracing White Balance function that automatically adjusts the camera's colour temperature in real time, simultaneously with a change in lighting. This is especially useful when a shoot is performed across different environments, such as from indoors to outdoors.

Electronic Soft Focus

The Electronic Soft Focus included in the camcorder applies an effect similar to using an optical soft-focus filter – but in a much more convenient way. Electronic Soft Focus uses the detail signal to reduce, rather than increase, the sharpness of the picture. By subtracting the detail signal from the original signal (as opposed to adding it as in conventional image enhancement), Electronic Soft Focus is able to provide a picture that is "softer" than the type achieved when detail is switched off completely. Electronic Soft Focus can be used in conjunction with Skin Tone Detail to change only the sharpness within a specific colour or hue range.

Multi-matrix Function

The Multi-matrix function enables colour adjustments to be applied over a colour and/or hue range as specified by the operator. The colour spectrum is divided into 16 areas of adjustment, where the hue and/or saturation of each area can be adjusted. This provides interesting in-camera colour effects – similar to secondary colour correction.

Colour Temperature Control

It is possible to dial in the required colour temperature of the camera. The overall colour balance of the picture can be changed to make it warmer or colder. This feature can be used very creatively, particularly in scenes with mixed colour lighting.

Interval Recording

Interval recording is a useful function, which intermittently records signals at pre-determined intervals, ideal for recording over long periods.

Other Convenient Functions

To provide the flexibility required for professional shooting, the DSR-450WSP and DSR-400P offer a variety of convenient functions:

- Programmable gain (-3/0/3/6/9/12/18/24/30/36 dB)
- Dual zebra (70 IRE to 90 IRE or more than 100 IRE)
- Marker (centre, safety zone, 4:3/13:9/14:9 aspect (DSR-450WSP only)
- Edit search – for easy access to edit points
- Stereo audio output (pin jacks)

DSR-450WSP with the RM-B750

DSR-450WSP Additional Features

Enabling Even Greater Shooting Creativity

Switchable Aspect Ratio

Wide-aspect CCDs and digital signal processing allow the DSR-450WSP to operate in both widescreen (16:9) and standard (4:3) aspect ratio modes. When shooting in 16:9 mode, it is also possible to display both 16:9 and 4:3 safety zones in the supplied DXF-801 viewfinder.

Film-like Images with Progressive Mode

Incorporating Sony Power HAD EX CCDs, the DSR-450WSP generates progressive images of 25P, delivering outstanding clarity as well as a cinematic look.

Selectable Gamma Table Including Film-Like Gamma

A selectable gamma table is provided to easily give a specific look to a picture by selecting from multiple fixed gamma patterns including so-called film-like gamma. Five patterns of film-like gamma and six patterns of standard gamma can be selected.

Slow Shutter

In addition to Turbo Gain, the DSR-450WSP features another convenient function for shooting in low-light conditions. Slow Shutter allows the operator to use shutter speeds longer than the frame rate.

- 1/25, 1/12.5, 1/8.3, 1/6.3, 1/5, 1/4.2, 1/3.6, 1/3.1 and 1/1.6 seconds (1 to 8 and 16 frame accumulation)

The Slow Shutter can be used either alone or together with an electric gain-up function depending on the shooting situation or the operator's preferences.

Versatile Interfaces

The DSR-450WSP provides an analogue composite output as standard, with an SDI output board (the CBK-SD01) available as a plug-in option. An optional composite input board (the CBK-SC01) is also available for pool feed applications. These optional boards are installed within the camcorder chassis to eliminate the need for an external camera adaptor unit, to maintain compactness and balance of the camcorder.

Camera Remote Control via Sony RM-B150/B750

Camera settings and basic VTR functions can be remotely controlled using an optional RM-B150 or RM-B750 Remote Control Unit via its 8- pin remote connector.

Silver Support

Silver Support

2-year Support

The Silver Support Pack extends the support period from the standard 1-year warranty to 2 years with the option to extend to a 3-year period. Not only that, extra features and services are also included.

Operational Helpdesk

Operational phone support is provided to give advice and help so that you can get the most out of your HDV and DVCAM equipment and maximise its performance. The multi-lingual helpdesk is available from Monday to Friday.

Collection Anywhere

In the event of equipment failure, Sony will arrange for the collection, repair and return of the unit directly to your location, anywhere in mainland EU, Norway or Switzerland. That makes it simpler, quicker and even more convenient for you.

Repair within 7 days

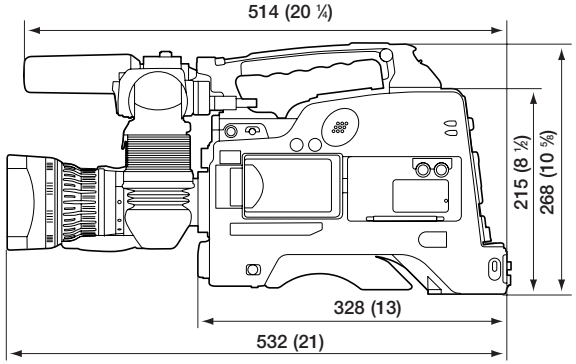
Sony will collect, repair and return the unit to your preferred location within 7 working days. So, minimum downtime, increased confidence and the ability to plan your business are guaranteed.

Loan

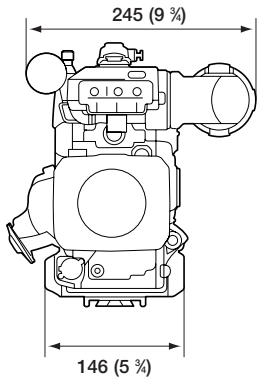
If the repair is likely to exceed 7 working days, Sony will contact you and offer to send a loan unit for the remainder of the repair.

Dimensions

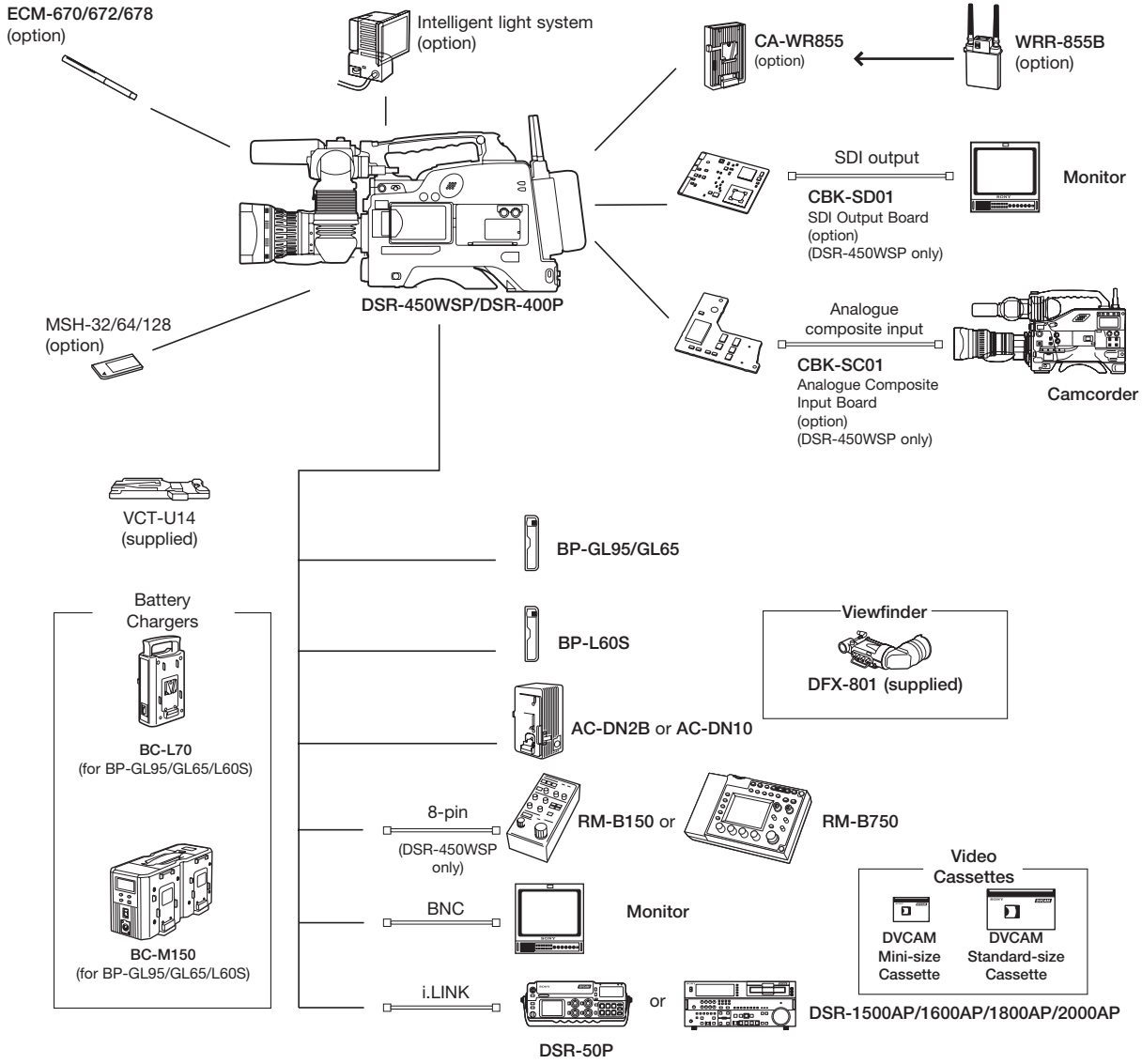
unit: mm (inch)



The zoom lens (VCL-917BY) in the drawing is supplied with the DSR-400PK only.



System Diagram



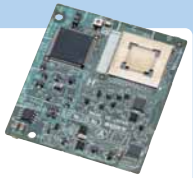
Optional Accessories

WRT-822B
UHF Beltpack Transmitter

WRT-807B
UHF Hand-held Transmitter

LC-H300
Carrying case (hard type)

CBK-SC01
Analogue Composite Input Board



CBK-SD01
SDI Output Board

CA-WR855
Camera Adaptor for
WRR-855B

WRR-855B
UHF Synthesized Tuner

WRR-862B
Dual UHF Synthesized Tuner

ECM-670/672/678
Elecret Condenser
Microphone

DXF-51
5-inch* Monochrome
Viewfinder (requires optional
accessory shoe kit A-8274-968B)

RM-B750
Remote Control Unit

RM-B150
Remote Control Unit

BP-GL65/GL95/L60S
Lithium Ion Battery Pack

BC-L70
Battery Charger for
BP-GL65/GL95/L60S

BC-M150
Battery Charger for
BP-GL65/GL95/L60S

AC-DN10
AC Adaptor

AC-DN2B
AC Adaptor

LC-DS300SFT
Carrying Case
(Soft type)

LCR-1
Rain Cover

A20x8.6BRM-SD
2/3-inch type Format
20x Lens from Fujinon

YJ19x9BKRS
2/3-inch type Format
19x Lens from Canon

CCF-3L
DV Cable
(6-pin with lock** to 6-pin)

CCFD-3L
DV Cable
(6-pin with lock** to 4-pin)

MSH-32/64/128/128S2
IC Recording Media Memory Stick
(32 MB/64 MB/128 MB/256 MB)

Product Configuration

	DSR-450WSPL	DSR-400PK	DSR-400PL
DVCAM Camcorder (4:3 model)	✔	✔	—
DVCAM Camcorder (4:3/16:9 model)	—	—	✔
DXF-801 Viewfinder (with Microphone Holder)	✔	✔	✔
VTC-U14 Tripod Adaptor	✔	✔	✔
External Microphone	✔	✔	✔
Shoulder Strap	✔	✔	✔
VCL-917BY Zoom Lens	—	✔	—

* Viewable area measured diagonally.
** The connector on one end of the cable has a lock mechanism, and is connected to an i.LINK connector with the same lock mechanism.

DSR-450WSP/DSR-400P Specifications

		DSR-450WSP	DSR-400P
General			
Power requirements		DC 12 V (11 to 17V)	
Power consumption		Approx. 17 W (with DC 12 V power supply, REC mode, viewfinder off, LCD monitor off)	
Operating temperature		0 to +40 °C (+32 to +104 °F)	
Storage temperature		-20 to +60 °C (-4 to +140 °F)	
Operating humidity		25 to 85%	
Mass		Approx. 6.5 kg (14 lb 5 oz) (with viewfinder, microphone, BP-GL65 battery, mini-size DVCAM cassette, VCL-917BY lens)	
Continuous operating time		Approx. 300 min. with BP-GL95 battery, REC mode	
Signal inputs/outputs			
Video inputs	Analogue composite	BNC, 1.0 Vp-p, 75 (with the CBK-SC01)	–
	Genlock video	BNC, 1.0 Vp-p, 75 Ω	
Audio input (CH-1/2)		XLR-3 (2), female, -60 dBu/+4 dBu, 10 kΩ , balanced	
Microphone input		XLR-3, female, -60 dBu	
Time code input		BNC, 0.5 to 18 Vp-p, 10 kΩ	
Video outputs	SDI	BNC, 0.8 Vp-p, 75 Ω (with the CBK-SD01)	–
	i.LINK	i.LINK, 6-pin IEEE 1394-based	
	Analogue composite	BNC, 1.0 Vp-p, 75 Ω	–
Audio output (CH-1/2)		Pin-jacks (2), -10dBu, 47kΩ	
Time code output		BNC, 1.0 Vp-p, 75 Ω	
Monitor output		BNC, 1.0 Vp-p, 75 Ω	
Earphone output		Mini-jack	
Other inputs/outputs			
Lens		12-pin	
VF		20-pin	
Remote		8-pin	–
Wireless microphone		7-pin	
Light		2-pin, DC 12 V, max. 50 W	
DC input		XLR-4-pin, male, DC 11 to 17 V	
DC output		4-pin (for wireless microphone receiver), DC 12 V (max. 0.2 A)	
Battery terminal		5-pin	
Camera performance			
Pickup device	Pickup device	3-chip 2/3-inch type Power HAD EX CCD	
	Aspect ratio	16:9/4:3 switchable	4:3
	Total picture elements (H x V)	1038 x 1188	
	Effective picture elements (H x V)	980 x 1064	

VCL-917BY Lens (for the DSR-400PK package)

Mass	Approx. 1.45 kg (3 lb 3 oz) (including a lens hood)
Dimensions (W x H x D)	139.8 x 99.5 x 218.9 mm (5 5/8 x 4 x 8 5/8 inches)
Zoom ratio	17:1
Focal length	9 to 155 mm (3/8 to 6 1/8 inches)
Zoom control	Servo/Manual switchable
Iris control	Servo/Manual switchable
Angle of view (H x V)	Wide: 815 x 611 mm (32 1/8 x 24 1/8 inches) Tele: 47 x 36 mm (1 7/8 x 1 7/16 inches)
F-number	F1.9
Minimum object distance	0.9 m (35 1/2 inches)

		DSR-450WSP	DSR-400P
Optical system	Spectral system	F1.4 prism (with quarts filter)	
	Built-in filters	1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND	
	Lens mount	2/3-inch type Sony bayonet mount	
Electrical characteristics	Signal system	PAL colour system	
	Scan format	625/50i, 625/25P	625/50i
	Sync system	Internal and External with the VBS or BS signal	
	A/D conversion	12 bits	
	Sensitivity	F11 (typical) (2000 lx, 89.9% reflectance)	
	Minimum illumination	0.5 lx (F1.4 lens, +36 dB gain, shutter off) 0.03 lx (with slow shutter, 16 frames accumulation)	0.5 lx (F1.4 lens, +36 dB gain, shutter off)
	Smear level	-140 dB (typical)	
	Video S/N ratio	63 dB (typical)	
	Horizontal resolution	850 TV lines (4:3 mode), 800 TV lines (16:9 mode)	920 TV lines
	Vertical resolution	480 TV lines (with EVS) and 530 TV lines (without EVS) at 625/50i mode 575 TV lines at 625/25P mode	480 TV lines (with EVS), 530 TV lines (without EVS)
	Shutter speed	1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 s at 625/50i mode 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 s at 625/25P mode	1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 s
	ECS	50 to 6000 Hz at 625/50i mode 25 to 6000 Hz at 625/25P mode	50 to 6000 Hz
	Slow shutter	1/25, 1/12.5, 1/8.3, 1/6.3, 1/5, 1/4.2, 1/3.6, 1/3., 1/1.6 s (1 to 8, 16 frames)	–
	Gain selection	-3, 0, 3, 6, 9, 12, 18, 24, 30, 36 dB (for GAIN LOW, GAIN MID, GAIN HIGH and GAIN TURBO positions)	
Video performance			
Recording format	Video	DVCAM/DV (SP) (25 Mb/s)	
	Audio	2 ch/16-bit/48 kHz, 2 ch/12-bit/32 kHz, 4 ch/12-bit/32 kHz (for use with a studio VTR)	
Record/playback time		DVCAM: 184 min (with the PDV-184ME), DV SP: 276 min (with the PDV-184ME)	
Fast forward time		Approx. 45 s (with the PDVM-40ME), approx. 2 min 30 s (with the PDV-184ME)	
Rewind time		Approx. 45 s (with the PDVM-40ME), approx. 2 min 30 s (with the PDV-184ME)	
Recommended recording media		PDV-184ME/124ME/94ME/64ME/34ME/184N/124N/94N/64N/34N, PDVM 184ME/124ME/94ME/64ME/34ME/184N/124N/94N/64N/34N	
Sampling frequency		Y: 13.5 MHz, R-Y/B-Y: 6.75 MHz	
Quantization		8 bits	
Audio performance			
Frequency response		48 kHz: 20 Hz to 20 kHz +0.5/-1.0 dB, 32 kHz: 20 Hz to 14.5 kHz +0.5/-1.0 dB	
Dynamic range		More than 80 dB	
Distortion (at 1 kHz, emphasis ON, reference level)		Less than 0.12% (at 1 kHz, reference level, 48 kHz)	
Built-in LCD monitor			
		2.5-inch type color LCD monitor, resolution: 214,000 (964 x 222) pixels	
Viewfinder			
CRT		1.5-inch type monochrome	
Indicators		REC TALLY (2), TAKE TALLY, BATT, SHUTTER, GAIN UP	
Horizontal resolution		600 TV lines	
Microphone		Electret condenser microphone (detachable)	

eco info

- Lead-free solder is used for soldering all the parts including circuit component electrodes.
- Halogenated flame retardants are not used in the printed wiring boards (100%).

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