SONY

4K/HD system camera

HDC-4300

4K

The next level in live production

HDC-4300
Live production in 4K and HD
Sports, music and entertainment will never be the same

Build the system that works for you

Maybe you’re looking to enhance HD broadcasts with stunning HD 1080 60P or high frame rate images. Maybe you’re diving into 4K live production or planning a long term migration from HD to 4K. Whatever your agenda, the HDC-4300 is ready. It works side-by-side with Sony’s legendary HDC-2000 Series cameras, using many of the same accessories. It steps up to 8x HD high frame rate with SZC-4002 software. You can get 4K output with SZC-4001 software. You can even choose from permanent or pay-per-use software options to get exactly the camera that meets your needs.

HDC-4300

The world's first three 2/3-inch camera with 4K sensors

Three 2/3-inch 4K sensors for 4K and HD output

4K establishes a new world of imagery. The HDC-4300 can take you there with three 2/3-inch native 4K CMOS imagers and an advanced optical system. The camera supports the ITU-R BT.2020 video specification beautifully, including the format's extended color gamut.* The result is a transformation in live production.

* Does not cover the BT.2020 color gamut in full.

B4 lens mount

While the HDC-4300 establishes a new era in production possibilities, it uses the same, familiar 2/3-inch B4 lenses that broadcasters already know and appreciate. You've got the same choice of glass, the same familiar zoom ranges, the same high-powered box lenses and the same depth of field.

8x ultra high frame rate

Nothing reveals the ballet of sports like high frame rate images. And no broadcast system camera performs high frame rate like the HDC-4300. The base camera captures Full HD at up to 3x high frame rate. The SZC-4002 software, available on a permanent or pay-per-use basis, expands HD high frame rates to 4x, 6x and 8x. You get up to 479.52 fps (60 Hz) or 400 fps (50 Hz) to display all the intricacies of the action .

Logical migration from HD to 4K

The HDC-4300 fits directly into Sony's growing 4K live production environment, alongside the PMW-F55 and F65 Super 35mm live camera configurations. The HDC-4300 connects to the same BPU-4000 processor, which accepts SZC-4001 software to enable 4K capture and 4K/HD outputs. The BPU-4000 also works directly with the HDCU-2000 and HDCU-2500 camera control units.

Compatible with Sony HDC-2000 Series accessories

Part of Sony's acclaimed HDC Series, the HDC-4300 works with the infrastructure that so many broadcasters and OB van operators already have, including viewfinders, large lens adaptors, remote control panels and camera control units.

Sony’s 4K/HD live production ecosystem

The HDC-4300 fits directly into Sony’s established 4K live camera system. Like the PMW-F55 and F65, the HDC-4300 works in combination with the BPU-4000 baseband processor unit and the HDCU-2000 or HDCU-2500 camera control unit. So you can control and power the camera through standard SMPTE fiber cables. And you can tweak settings via RCP-1000 Series remote control panels or MSU-1000 Series master setup units.

You can also add the HDC-4300 to an existing HDC-2000 Series camera system, for multi-camera operation with seamlessly matched colorimetry. With the SZC-4001 software, the HDC-4300 camera can provide multiple HD and 4K outputs, perfect for operating side-by-side with the PMW-F55 (equipped with the CA-4000 adaptor) or the F65 (equipped with the SKC-4065 and CA-4000 adaptors).

Sony’s 4K live ecosystem includes other landmark components

- The PWS-4400 server enables HD and 4K recording and high frame rate capture with up to 8x replay (requires V1.4 upgrade).
- The MVS-8000X and MVS-7000X multi-format switchers perform real-time 4K signal processing.
- The BVM-X300 OLED evaluation monitor is a triple threat, providing 4K resolution, High Dynamic Range and wide color gamut.
- The PVM-X300 4K LCD picture monitor is the choice for general applications

Whether you need pure 4K live production or a logical migration from HD to 4K, Sony’s ecosystem enables you to deliver spectacular imagery to audiences worldwide.

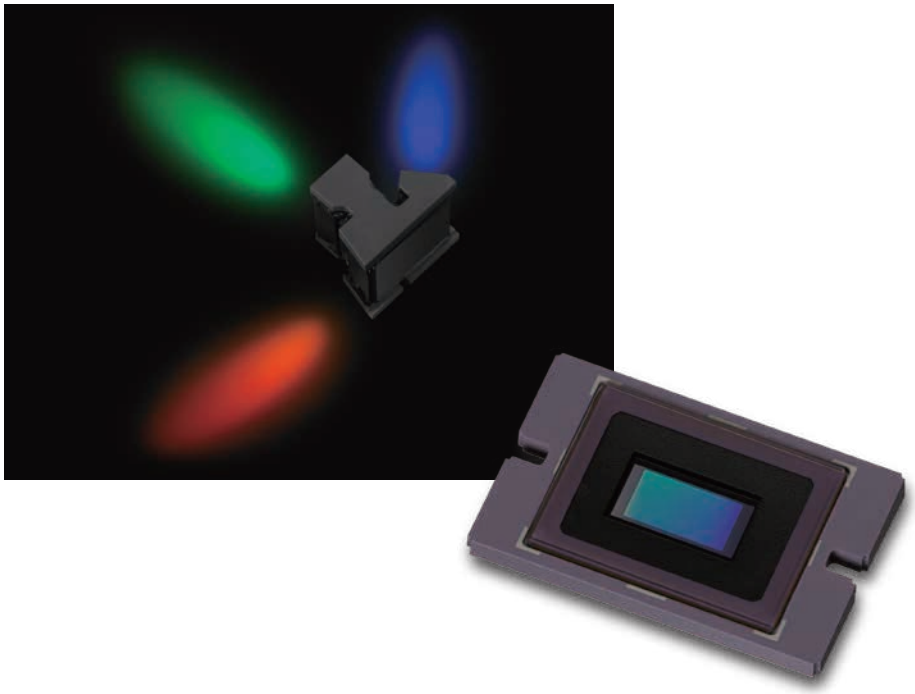
1 HDC-4300 2 BPU-4000 3 HDCU-2000

You can’t build the future with yesterday’s technology

4K resolution (with SCZ-4001), wide dynamic range and wide color gamut

The HDC-4300 embodies Sony’s unrivalled expertise with purpose-built innovations, including the world’s first three 2/3-inch 4K imagers and ultra-precise alignment to mount the chips to a newly-developed prism. This cutting-edge optical system takes advantage of the wide color gamut* defined by the ITU-R BT.2020 specification. So you can deliver exquisite color reproduction in live broadcasts.

* Does not cover the BT.2020 color gamut in full.



Up to 8x high frame rate in HD with SZC-4002 software for the BPU-4000

The base-level HDC-4300 provides HD high frame rates at 2x and 3x. Using SZC-4002 software, the BPU-4000 baseband processor unit expands HD high frame rates to 4x, 6x and 8x capture—a maximum of 479.52 fps (60 Hz) or 400 fps (50 Hz). The output remains remarkably consistent across the range of operating frequencies, even at 8x. You get excellent image quality at both normal speed and high frame rates, adjustable with the same paint parameters.

You can record to the PWS-4400 4K/HD server for up to 8x high frame rate replay (requires software upgrade V1.4). Some third party servers may also be used.

Simulated image

HD cutout, pan and zoom with SZC-2001 software for BPU-4000

Imagine using the 4K canvas to create an entirely new narrative during replay. The Sony BPU-4000 baseband processor unit and SZC-2001 software enable you to keep the camera in a fixed position, then zoom into the 4K image, creating an HD “cutout.” You can also pan around in real time, following the play as never before. In Zoom & Perspective mode, you can cut out one portion while performing perspective transformation, according to the lens focal length. In Simple HD mode, two portions can be cut out at the same time. Sony’s cut-outs and zooms give viewers a beautifully clear image.

You can control the cutout region with a mouse or other devices connected to the controllers such as the CNA-1 camera control network adaptor.
The BPU-4000 can output the cutout images and the 4K full-source image simultaneously. HD images down-converted from the 4K full-source image can also be output from the BPU-4000 and the HDCU-2000/HDCU-2500.
In addition, a wire frame indicating the cutout region can be displayed on the signal from the BPU-4000.

Zoom & Perspective mode:

Cutout HD image

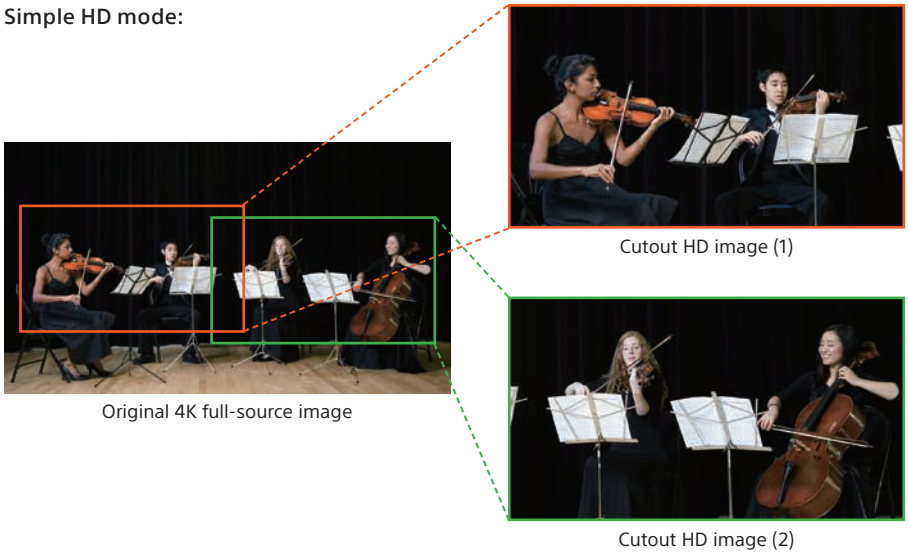
Original 4K full-source image

Picture adjustment functions of HDC Series cameras supported in the 4K live camera system

The HDC-4300 system supports a robust range of live camera adjustments in 4K operation.

- Dynamic focus (4K focus assist): Because focus in 4K is especially critical, you can display a marker in the viewfinder when 4K resolution is achieved.
- Auto Lens Aberration Compensation 2 (ALAC2)
- Color adjustments
- Gamma table selection
- User gamma
- Natural skin-tone detail
- Knee saturation
- Low-key saturation

Simple HD mode:



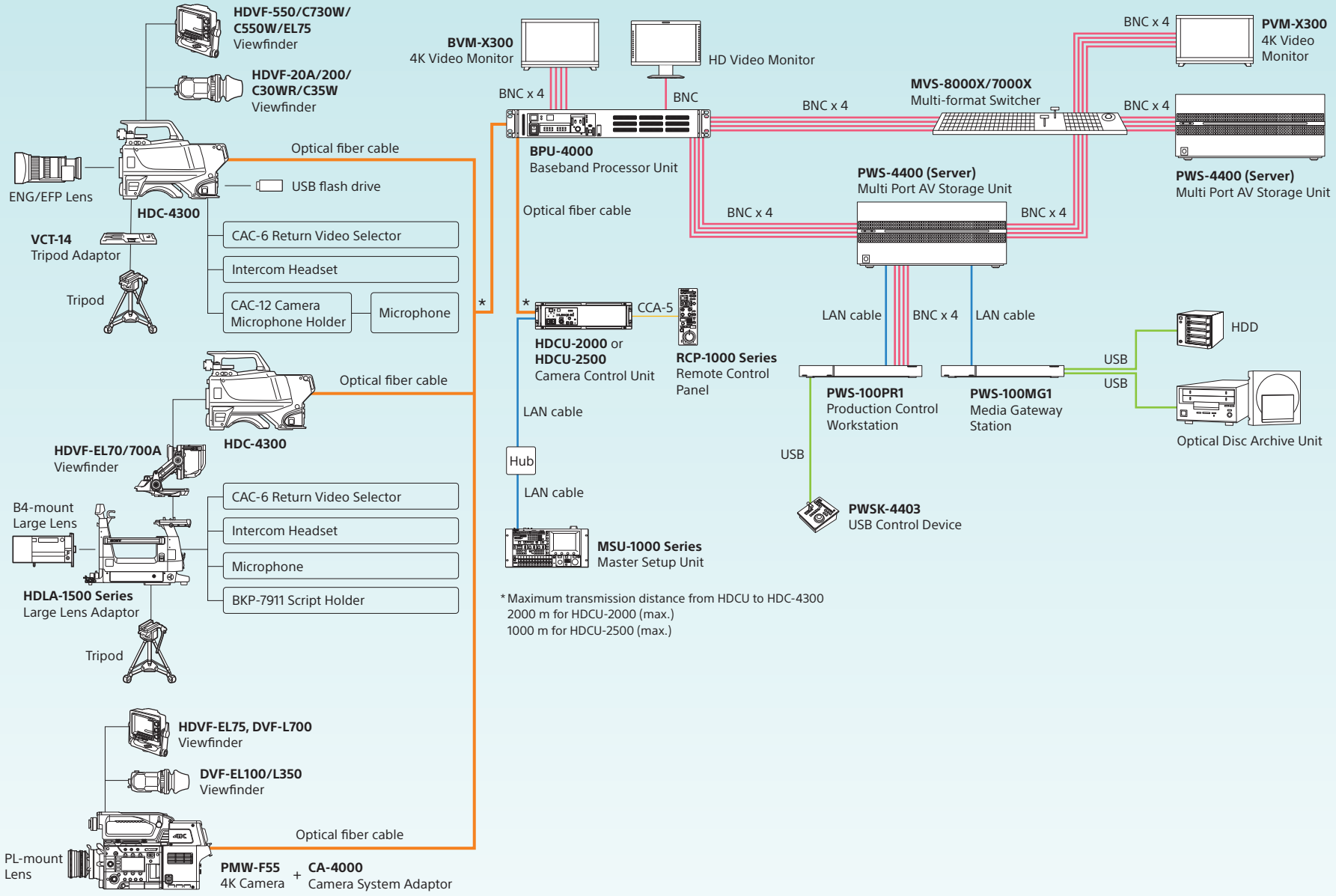
Original 4K full-source image

Cutout HD image (1)

Cutout HD image (2)

Simulated images

System Configuration Examples



* Maximum transmission distance from HDCU to HDC-4300
2000 m for HDCU-2000 (max.)
1000 m for HDCU-2500 (max.)

Related Products

Baseband Processor Unit
BPU-4000

The BPU-4000 accepts HDC-4300 signals via an optical fiber cable, performs real-time 4K digital signal processing and then outputs 4K and down-converted HD simultaneously. You can optimize detail separately for 4K and HD.

- Parallel processors for 4K/HD
- 4K to HD down-converter
- HD Cutout using SZC-2001 software
- HD High-fame-rate operation using SZC-4002 software

Camera Control Unit
HDCU-2000
HDCU-2500

The HDC-4300 works with the same, full-rack-size HDCU-2000 and half-rack HDCU-2500 camera control units (CCUs) that are well established for Sony's immensely popular HDC-2000 and HDC-2500 cameras. These CCUs supply power to the camera; interface with peripheral equipment; and transfer Intercom, Tally, Prompter, Audio, and other signals. Fiber transmission maintains the camera's pristine picture quality.

When you're going on-location and need to travel light, you can operate without an HDCU-2000/HDCU-2500. Just supply power to the HDC-4300 locally.

Large Lens Adaptor
HDLA-1500, HDLA-1505, HDLA-1507

To minimize setup time, Sony's large lens adaptors connect via a cable-less interface. Our clever interlocking mechanism passes power, video and control signals directly from the HDC-4300 camera. You can attach and detach the camera without removing large lenses. And you can remove a lens from the HDLA-1500 or HDLA-1505, even when the camera is mounted on the adaptor. Setup becomes astonishingly quick and smooth.

HDLA-1500

HDLA-1505

HDLA-1507

Multi Port AV Storage Unit
PWS-4400

This server records both 4K and HD video signals (up to four 4K channels) using Sony's highly efficient XAVC® video format. It's easy to recall and control recorded content for high frame rate replay. (V1.4 software required for 8x high frame rate.)

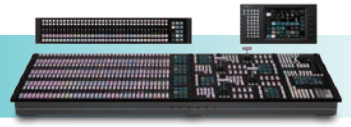
Production Control Station
PWS-100PR1

Media Gateway Station
PWS-100MG1

USB Control Device
PWSK-4403

Operate live slow motion with the PWS-100PR1 and PWSK-4403. The PWS-100MG1 transfers content to and from removable media such as USB hard drives and Optical Disc Archive units. For 8x slow motion reply, the PWS-4400 system requires software upgrade V1.4.

Multi-format Switcher
MVS-8000X, MVS-7000X



Sony's flagship switchers support 4K via software upgrades. The optional MKS-8460X 4K format converter board enables high-performance HD-to-4K up-conversion.

Upgrade software:
BZS-8570X for MVS-8000X
BZS-7570X for MVS-7000X

4K OLED Evaluation Monitor
BVM-X300

One monitor combines Sony's amazing TRIMASTER EL™ OLED performance with 4K resolution, High Dynamic Range mode and wide color gamut supporting DCI-P3 and the BT.2020* video format color space, as defined by the ITU-R specification.

* Does not cover the BT.2020 color gamut in full.

4K LCD Picture Monitor
PVM-X300

See your 4K picture with pixel-for-pixel accuracy. The PVM-X300 is ideal for 4K live production camera control and program preview, in addition to 4K digital cinematography and 4K presentation.

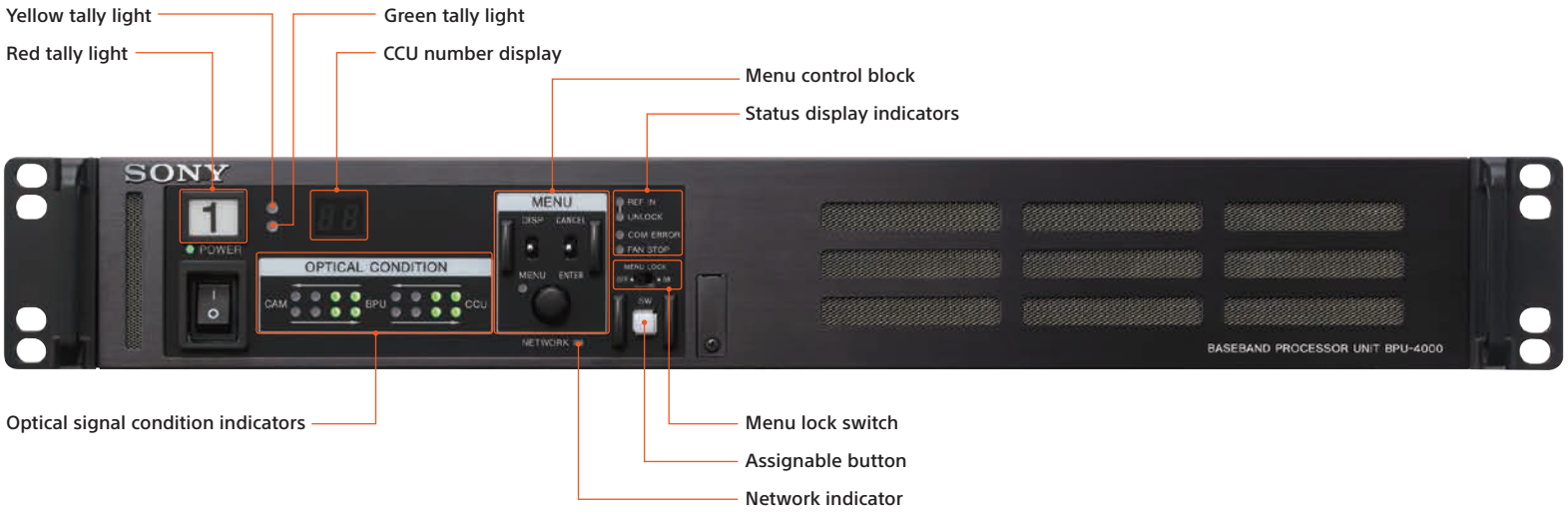
Front

Rear (with HDVF-20A)

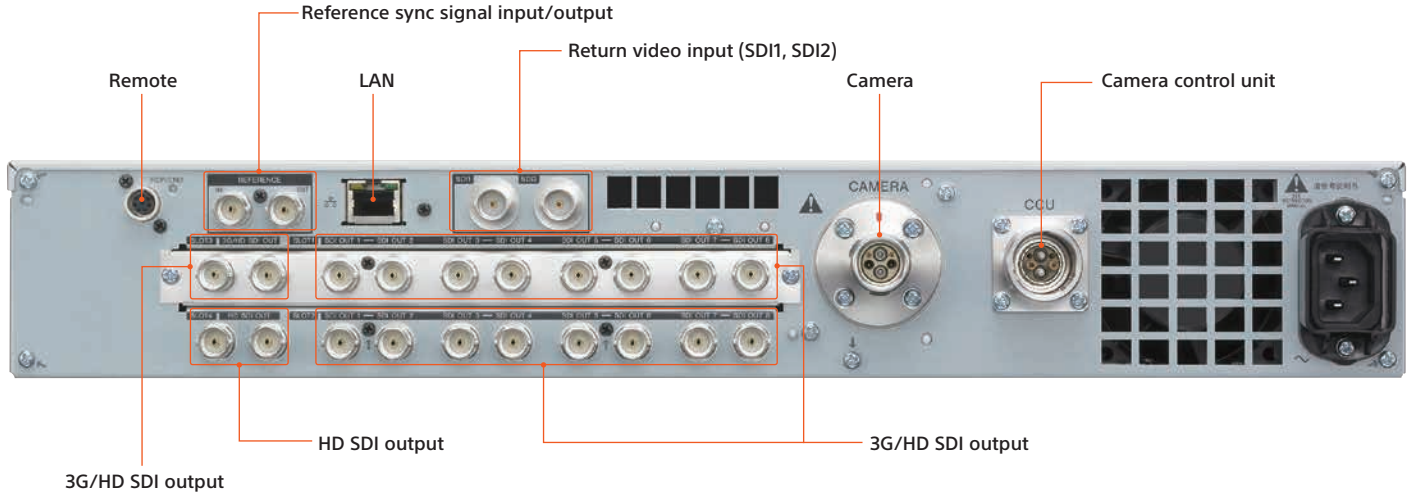
For 60 Hz countries

For 50 Hz countries

Front


Yellow tally light
Red tally light
Green tally light
CCU number display
Menu control block
Status display indicators
SONY
POWER
OPTICAL CONDITION
CAM
BPU
CCU
MENU
DISP
CANCEL
MENU
ENTER
NETWORK
REF IN
UNLOCK
COM ERROR
FAN STOP
MENU LOCK
SW
BASEBAND PROCESSOR UNIT BPU-4000
Optical signal condition indicators
Menu lock switch
Assignable button
Network indicator

Rear


Reference sync signal input/output
Return video input (SDI1, SDI2)
Remote
LAN
Camera
Camera control unit
REFERENCE
CAMERA
CCU
HD SDI output
3G/HD SDI output
3G/HD SDI output

Optional Accessories

MSU-1000
Master Setup Unit

MSU-1500
Master Setup Unit

RCP-1000
Remote Control Panel

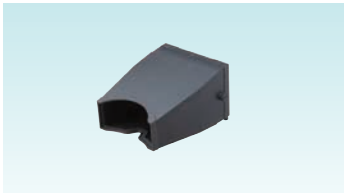
RCP-1001
Remote Control Panel

RCP-1500
Remote Control Panel

RCP-1501
Remote Control Panel

RCP-1530
Remote Control Panel

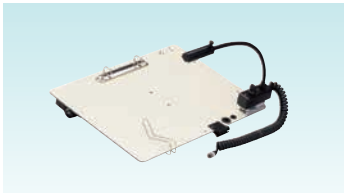
HDVF-EL75
7.4-inch* OLED Color Viewfinder



VFH-790
Outdoor Hood for HDVF-EL70/EL75

HDVF-L770
7-inch* LCD Color Viewfinder

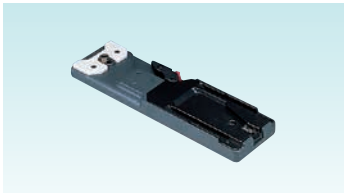
HDVF-20A
2.0-inch* CRT B/W Viewfinder



BKP-7911
Script Holder

CAC-6
Return Video Selector

CAC-12
Mic Holder



VCT-14
Tripod Adaptor

CNA-1
Camera Control Network Adaptor

HDCE-100
Camera Extension Adaptor

* Viewable area measured diagonally.

Specifications

HDC-4300	
General	
Power requirements	AC 240 V, 1.4 A (max.), DC 180 V, 1.0 A (max.), DC 12 V, 7 A (max.)
Operating temperature	-4°F to +113°F (-20°C to +45°C)
Storage temperature	-4°F to +140°F (-20°C to +60°C)
Weight	Approx. 11 lb 0.37 oz (5.0 kg) (unit onlly)
Camera section	
Pickup device	3-chip 2/3-inch type CMOS
Spectrum system	F1.4 prism
Built-in filters	ND: 1: CLEAR, 2: 1/4ND, 3: 1/8ND, 4: 1/16ND, 5: 1/64ND CC: A: CROSS, B: 3200K, C: 4300K, D: 6300K
Sensitivity	F8.0 (2000 lx, 89.9% reflection)
Signal-to-noise ratio	-62 dB (HD/59.94i)
Horizontal resolution	2000 TV lines (at center) in 4K, 5% or higher modulation
Input/output connectors	
BPU	Optical/electrical multi-connector (1)
Audio input (CH1, CH2)	XLR-type 3-pin, female (1 each) For MIC: -60 dBu (can be set to a value up to -20 dBu using the menu or from the HDCU2000/2500), balanced For LINE: 0 dBu, balanced
Mic input	XLR-type 3-pin, female (x 1)
Return control	6-pin (x1)
Prompter/Genlock	BNC (x1), 1 Vp-p, 75 Ω
Prompter 2	BNC (x1), 1 Vp-p, 75 Ω
DC input	XLR-type 4-pin (x1), DC 10.5 V to 17 V
DC output	4-pin (x1), DC 10.5 V to 17 V, 0.5 A (max.) 2-pin (x1), DC 10.5 V to 17 V, 2.5 A (max.) (Limitations may apply, depending on the load and input conditions.)
Test out	BNC (x1)
SDI (1, 2)	BNC (1 each)
SDI Monitor	BNC (x1)
Earphone	Stereo mini jack (x1)
Tracker	10-pin (x1)
Crane	12-pin (x1)
Intercom (1, 2)	XLR-type 5-pin, female (1 each)
Remote	8-pin (x1)
Network trunk	RJ-45 8-pin (x1)
Lens	12-pin (x1)
Viewfinder	20-pin (x1)
USB	USB 2.0, Type A, 4-pin (x1)
Supplied accessories	
	Operation manual (1), Cable clamp belt (1set), Number plates (1set), Screws (+B3x8) (2)

BPU-4000	
General	
Power requirements	AC 100 V to AC 240 V, 50/60 Hz
Operating temperature	41°F to 104°F (5°C to 40°C)
Storage temperature	-4°F to +140°F (-20°C to +60°C)
Weight	Approx. 15 lb (6.8 kg)
Dimension (W x H x D)	16 3/4 x 2 5/8 x15 5/8 inches (424 x 66 x395 mm) excluding protrusions
Input/output connectors	
Camera	Optical fiber (x1)
CCU	Optical fiber (x1)
Remote	8-pin multi-connector (x1)
LAN	8-pin (x1)
SDI input	BNC (x2) 3G-SDI: SMPTE ST424/425 Level-B, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
Reference input	BNC (x1) HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 Ω SD: Black burst (NTSC: 0.286 Vp-p, 75 Ω, PAL: 0.3 Vp-p, 75 Ω)
3G/HD-SDI output	BNC (x18) 3G-SDI: SMPTE ST424/425 Level-A/B, 0.8 Vp-p, 75 Ω, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps, 3G-SDI/HD-SDI selectable
HD-SDI output	BNC (x2) SMPTE ST292, 0.8 Vp-p, 75 Ω, 1.485 Gbps/1.4835 Gbps
Reference output	BNC (x1) HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 Ω SD: Composite sync, 0.3 Vp-p, 75 Ω, HD sync/SD sync selectable
Supplied accessories	
	Number plates (1 set), Operation Guide (1), Operation Manual (CD-ROM) (1)

SONY

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