

SONY[®]

NTSC

Studio/OB/EFP Camera Family

BVP-900/950



BVP-900/BVP-950

Sony Color Video Camera

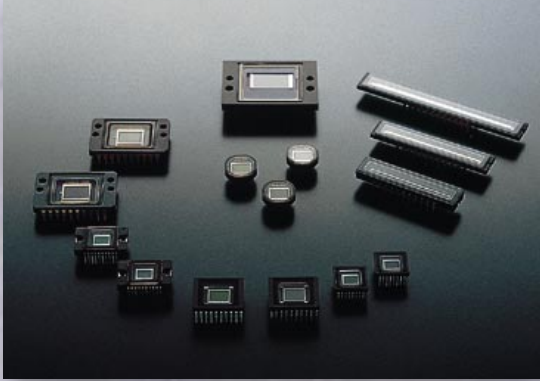
The BVP-900 and the BVP-950 are a new standard camera family used for Studio and Outside Broadcasting, which incorporates an optimized combination of a new low-noise CCD and a newly developed advanced 12-bit Digital Signal Processor. They are operationally fully compatible with the world renowned BVP-700/750 family and 10-bit DSP BVP-500/550 family. This complete and integrated digital line of DSP cameras offer system choices to meet the diversified needs of camera crews and video engineers for all studio/OB/EFP applications. Using this latest CCD and LSI technology, the BVP-900 and the BVP-950 open a new level in superior performance, extensive creative features, and also a high-cost performance ratio.





Newly Developed DSP LSI and Power HAD™ CCD

The latest Power HAD CCD technologies (both FIT and IT) and the 12-bit A/D converter significantly improve both Signal to Noise ratio and operational Dynamic Range. The superb reproduction of both low-light and over-exposed areas of a scene are improved by this optimized combination, enabling the BVP-900 and BVP-950 to be used under a wide range of lighting conditions, both for Studio production and Outside broadcasting.



Advanced DSP LSI using the latest semiconductor technology has been newly developed and implements both enhanced performance and picture manipulation features.

Power HAD 1000 CCD technology which was refined to realize latest CCD for HDTV allowed higher sensitivity and lower smear level. In particular, the IT Wide Switchable CCD now cost-effectively achieves wide screen picture with low smear level. The Sony FIT CCD has been further enhanced to an extraordinarily low vertical smear level.

- Number of Pixel: 520K
- Sensitivity: F10 with OHB-750WSA/730WS/730 and F8 with OHB-750A (at 2000 lx, 89.9% reflectance)
- Smear Level: -145dB(FIT)/-120dB(IT Wide Switchable)
- Signal to Noise ratio (typical): 65dB

Precise and Flexible Handling of High-light Position

Knee Saturation Control improves color reproduction in very bright areas and **Adaptive High-light Control** optimizes dynamic range.

Knee Saturation: Traditional shooting very high bright portions of an object such as the human forehead under difficult lighting conditions tends to reduce and rotate the Hue. With the Knee Saturation Control, the 'wash-out' effect on hue is reduced and a far more natural color reproduction in very bright areas is realized.



Normal



Knee Saturation



Normal



Adaptive Highlight Control

Adaptive Highlight Control: By optimizing the knee curve according to a high-light picture, the BVP-900 and the BVP-950 can reproduce difficult bright images (such as sunlight through a window in an interior scene) allowing more effective handling of video dynamic range. The middle and low luminance parts are not changed. This new function applies only to input video levels in excess of the knee point. By combination with Black Gamma Control, a dark areas can be exposed more clearly.

Advanced Detail Control

New Digital Adaptive Detail and Fine Detail support creation of more natural pictures by a more refined control of the enhancer, and a variety of subtle picture creations are enabled by the new Electronic Soft Focus and the choice of Triple Skin Tone Detail systems.

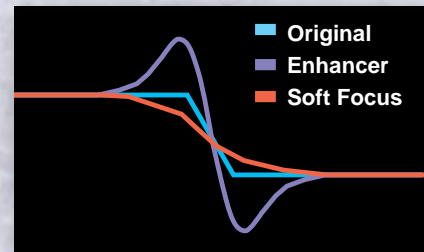
Adaptive Detail Control: The Adaptive Detail Control realizes natural detail enhancement on severe highlight transitions (without Digital alias) by automatically altering the amplitude of the edge signal for those forms of high contrast signals.



Conventional Detail Control

Adaptive Detail Control

Electronic Soft Focus: This function of the BVP-900 and the BVP-950 has an effect similar to an optical Soft Filter. This function subtracts the 2-dimensional enhancer edge signal from the original video signal. This can be an important new creative alternative to the Skin Tone Detail function, when a more 'film look' is sought on close-ups etc.

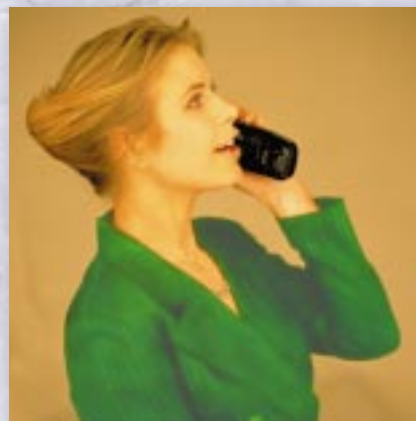


Fine Detail Control: For more natural reproduction, the BVP-900/950 provides the ability to reduce the H-Detail width of the detail signal without moving the peak frequency of the enhancement signal.

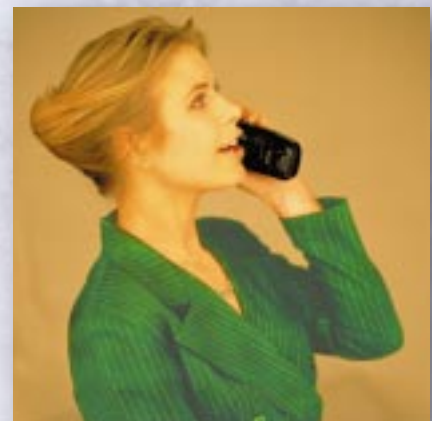
Triple Skin Tone Detail Control: This feature allows different amounts of detail to be applied to different skin tones. However the degree of control is such that it can be used to increase or decrease the amount of detail applied to areas of any three colors.



Normal



Skin Tone Ch1 On



Skin Tone Ch2 On

Easy Operation

Skin Tone Auto Iris: Skin Tone Auto Iris is a function which controls the auto Iris system to ensure a constant video level associated with a selected human skin area within the scene. Skintone Auto Iris is especially useful for news studio where movement of bright objects (such as shirt or blouse) tends to adversely readjust the auto Iris setting for facial exposure. If the color phase is adjusted to face tone of the news announcer, the Iris now maintains the same video level even if the announcer turns the scripts, or people enter or exit the scene.

Precise Adjustment

Multi Matrix: Color phase is divided into 16 parts and linear Matrix Parameter makes it easy to adjust each independent 16 color phases. This function allows to make an original color and hue easily.

3D White Shading: THE BVP-900/950 system replaces traditional use of vertical and horizontal sawtooth and parabola wave form for White Shading Correction. A digital 3-D multi-zone system uses 1024 points of data over the raster to camera create a smooth correction topography that can far better handle the variations over many Lens types and Lens zooming ranges.

Flexible System Operation

The BVP-900 and the BVP-950 are fully compatible with Sony's New Generation Camera Control Units. They also can be used with BVP-700 Series and BVP-500 Series conventional camera systems via Sony MSUs, CNUs and RCPs. Cameras connected to one CCU can be transferred to operate with the other CCU without readjustment.

Wide Band Triax Transmission System

The BVP-900/950 is intended for optimized picture performance in outside broadcast applications as well as in the production studio. Major sporting and entertainment events regularly call for extended runs of the triaxial cable connecting the camera head unit to the remote CCU. Sony has implemented a totally new triax system design in the BVP-900/950. This wide band triax system extends the video transmission bandwidth (luminance signal: 10MHz, color difference signals: 6MHz,) while it maintains the important philosophy of a Y/R-Y/B-Y component triax transmission. The Y/R-Y/B-Y triax system has the distinct advantage of avoiding differential time delay between R/G/B channels (which may, on extended cable runs, reduce luminance horizontal resolution and defeat the CCD spatial offset alias-reduction.) The following benefits are provided by the wideband Y/R-Y/B-Y triax system.

The whole camera system can be operated with exceptionally low noise and thus transmits the full-band of camera signals to the CCU output via this triax system.

The Sony Y/R-Y/B-Y wideband triax system allows long cable operation up to 2000m via ϕ 14.5mm cable (1000m via ϕ 8.5mm cable) without compromises in resolution, alias-reduction, or S/N.



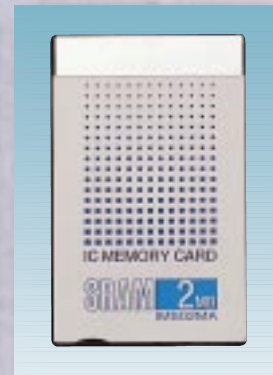
Longer transmission will be especially useful for outside broadcasting scene.

Advanced Filing System

The BVP-900/950 can store various filing data in each camera head unit, including reference file, scene files and OHB data file. The same data can be also stored in an IC card within the MSU-700 via network with CNU-700/500. The video engineer can remotely set up each camera head within a multi camera operation from a central MSU panel. Furthermore, the Optical Head Block can store its OHB data within itself, so there is no need of readjustment in the event that an OHB might be changed.



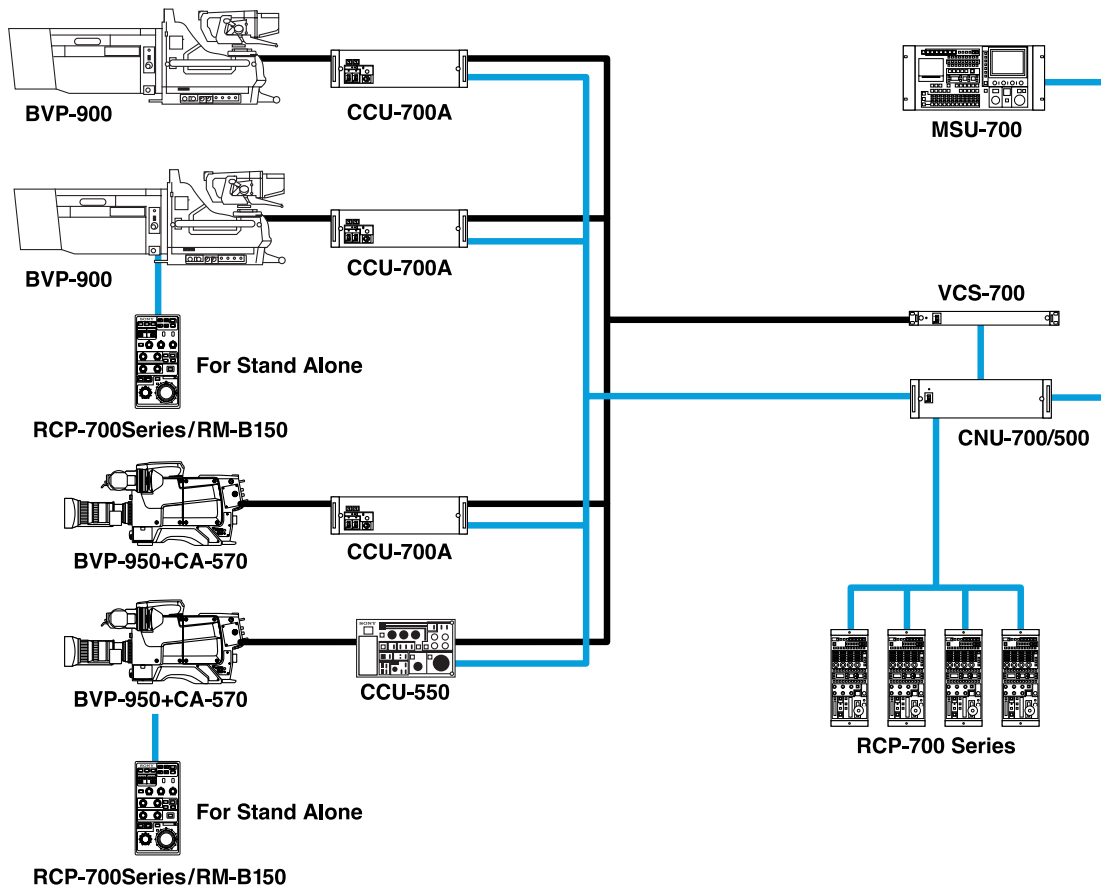
MSU-700



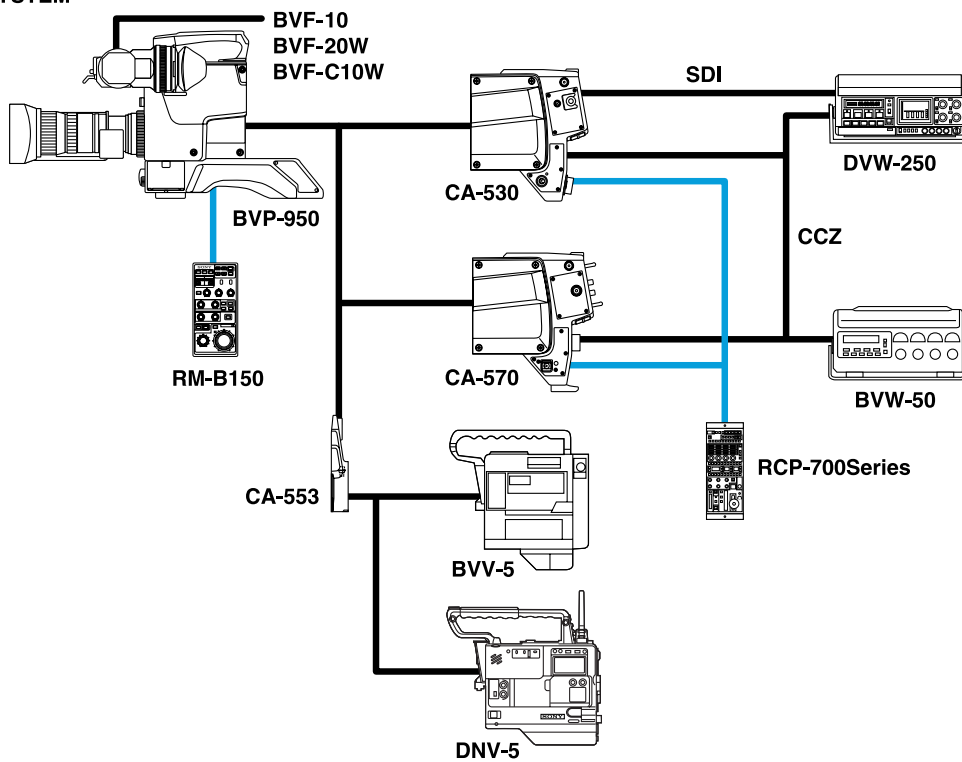
PC Card

System Configuration

PRODUCTION/OB VAN/STUDIO



PORTABLE SYSTEM



Enhanced Camera Setup and Operation with Ergonomic Design

BVP-900

- Low Profile Design considering of storage in OB Van



- Full plug-in CCD block

- View Finder height is as close as possible to the lens axis so that the BVP-900 realizes less parallax and comfortable camera operation



- Rotary type Triax connector



- Safety, such as view finder Lock system and side panel lock system is also available



- Return select switch which can select 4 return pictures quickly. It realizes convenient simulcast program



- Improving operational setup, using such VF menu display
- Various input/output connectors and optional accessories

BVP-950

● New material of shoulder pad and pivot adjustable chest pad make it more comfortable to fit on the shoulder



Using New soft material



Chest pad

● Switch cover on the side panel prevents miss operation



● Various camera adapter can be used with BVP-950



CA-570 for Triaxial Output

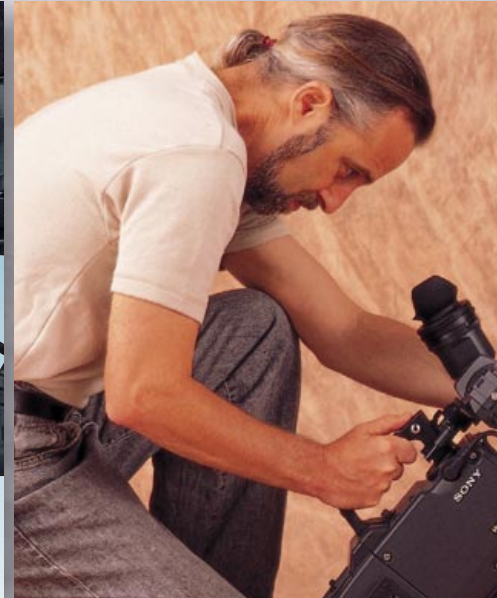


CA-530 for SDI and VBS Output



CA-553 for Dockable VTR

● Return 1 and 2 switch/Intercom switch on the carrying handle makes it easy to shoot by very low-angle



● Servo-controlled ND and CC filters



● It is easy to dock or release camera adapter by one button action. And the releasing button uses screw mechanism to prevent the release by mistake



CA-570

- Control panel on the rear side enables easy operation when used with 5-inch view finder
- Two channels of Intercom
- Interface with Tracker and Return switch box
- Return signal select switch
- Prompter out
- Reverse Trunk Video (Camera to CCU) is enabled
- Can be used with BVP-550, BVP-570 and BVP-950



- Rotary type triax connector

OHB-750 Series

OHB-750A series is newly developed with latest CCD technology which enables 3D White Shading function. IT models, the OHB-730 Series, are also available. Aspect ratio converter board is supplied to 16:9 CCD block, the OHB-750WSA and the OHB-730WS. These new OHB series can be used with current BVP-700/750 camera head unit.

- **OHB-750A:** 4:3 FIT
- **OHB-750WSA:** 16:9 /4:3 Switchable FIT
- **OHB-730:** 4:3 IT
- **OHB-730WS:** 16:9/4:3 Switchable IT

Specifications

■ BVP-900

(with OHB-750A or OHB-750WSA installed)

Input Connectors -

Audio in: XLR-3P (Female x 2), phantom +48V, Line
Ref in: BNC (with an optional standalone kit)
DC in: XLR-4P (Male, with an optional standalone kit)
RET control: 6-pin

Output Connectors -

Test out: BNC type, 1.0Vp-p, 75Ω
Prompter: BNC type, 1.0Vp-p, 75Ω, input/output
Video out: BNC type, 1.0Vp-p, 75Ω
(with an optional standalone kit, BKP-7910)
Viewfinder connector: D-sub 25-pin
DC out: 4-pin, 5W/12VDC
Intercom: XLR-5P x 2, input/output
AC utility out: Max.200VA

Input/Output Connectors -

CCU: UC:Kings type
J:Tajimi type
CE:Fischer type
Lens: 36-pin
VTR: 26-pin (with an optional standalone kit, BKP-7910)
Tracker: 10-pin
Remote: 8-pin (for RCP-700 series)

General-

Mass: 20Kg (44 lb 1 oz)
Dimensions: 442(L) x 381(H) x 368(W) mm
(17 1/2 x 15 x 14 1/2 inches)
Operating temperature: -20 to +45°C (-4 to +113°F)
Storage temperature: -20 to +50°C (-4 to +122°F)

Supplied accessories -

- Angle adjustment fittings (x2)
- Front cover (x1)
- Number plate: for up tally (x1)
for side panel (x2)
for rear panel (x1)
- Belt for cable clamp (x2)
- Operation manual (x1)
- Maintenance manual (x1)
- 16:9/4:3 conversion board
(supplied with OHB-750WSA/730WS)

Optional accessories -

- Extension board (x2)
- BVF-77, 7-inch B/W viewfinder
- BVF-7700, 7-inch color viewfinder
- VFH-770, 7-inch viewfinder sports hood
- BKP-7910, standalone kit
- BKP-7911/7912, script holder
- OHB-750WSA/750A/730WS/730
- BKP-9901, system manual

Recommended equipment -

- CCU-700A, camera control unit
- MSU-700, master setup unit
- RCP-740/741/730/731/720/721/700/701,
remote control panel
- RM-B150, Remote Control Unit
- VCS-700, video selector
- CNU-700, camera command network unit
- CNU-500, camera command network unit

■ BVP-950

(with OHB-750A or OHB-750WSA installed)

Input Connectors -

MIC 1: XLR-3P (Female), phantom +48V

Output Connectors -

Test out: BNC type, 1.0 V p-p, 75Ω

Input/Output Connectors -

Viewfinder I/F: 20-pin
Lens: 12-pin
Camera adapter I/F: 136-pin (68-pin x2)
Remote: 8-pin (for RCP-700 series and RM-B150)
OHB I/F: 29-pin

General-

Mass: 3.7 Kg (7 lb 5 oz) with BVF-10 and OHB-750A
Dimensions: 302(L) x 270(H) x 127(W) mm
(12 x 10 3/4 x 5 inches)
Operating temperature: -20 to +45°C (-4 to +113°F)
Storage temperature: -20 to +50°C (-4 to +122°F)

Supplied accessories -

- Operation manual (x1)
- Maintenance manual (x1)
- 16:9/4:3 conversion board
(supplied with OHB-750WSA/730WS)

Optional accessories -

- CA-570, camera adapter for CCU-700A, CCU-550
- CA-553, camera adapter for BVV-5, CA-3A, DNV-5
- VCT-14, Tripod adapter
- Extension board (x2)
- CA-530, camera adapter for SDI output
- OHB-750A/750WSA/730/730WS
- BVF-10, BVF-20W, BVF-C10W
- BKP-9901, System manual

■ CA-570

Connectors -

MIC IN: XLR 3-pin (Female),
600Ω, balanced, phantom +48V
DC IN: XLR 4-pin(Male), 10.5V to 17V
DC OUT: 4-pin, 10.5V to 17V, Max 200mA
REF IN: BNC, 1.0Vp-p, 75Ω
RET OUT: BNC, 1.0Vp-p, 75Ω
RETURN CONTROL: 6-pin
EARPHONE: Mini jack, 8Ω
CAMERA I/F: 68-pin
VTR: 26-pin (CCZ type)
CCU (Triax): UC:Kings type
J:Tajimi type
CE:Fischer type
CCU (Coax): BNC (Option)
INCOM/PGM: 2 CH, Headset XLR 5-pin
RCP: 8-pin (Female)
Tracker: 10-pin

Transmission -

φ 8.5mm cable 1000m (Almost 0.6 mile) (with CCU-700A)
φ 14.5mm cable 2000m (Almost 1.2 miles) (with CCU-700A)

General -

Power consumption: 10W (with BVF-10)
Weight (Approx.): 2.5Kg (5 lb 8 oz)
Dimensions 193(L) x 212(H) x 130(W) mm
(includes triax connector)
(7 5/8 x 8 3/8 x 5 1/8 inches)
Operating temperature: -20 to 45°C (-4 to +113°F)
Storage temperature: -20 to 50°C (-4 to +122°F)

Supplied accessories-

- Operation manual (x1)
- Maintenance manual (x1)

Optional accessories-

- Extension board (x1)

Recommended equipment -

- BVF-55, 5-inch B/W viewfinder
- VFH-550, 5-inch viewfinder sports hood
- AC-550, AC Adapter

OHB Specifications

	OHB-750A	OHB-750WSA	OHB-730	OHB-730WS
Pickup device	3-chip 2/3-inch FIT 4:3 Standard	3-chip 2/3-inch FIT 16:9 Switchable	3-chip 2/3-inch IT 4:3 Standard	3-chip 2/3-inch IT 16:9 Switchable
Picture elements	1038 (H) x 504 (V)	1038 (H) x 504 (V)	1038 (H) x 504 (V)	1038 (H) x 504 (V)
Specuram system	F1.4 prism system	F1.4 prism system	F1.4 prism system	F1.4 prism system
Color filter-A	Cross	Cross	Cross	Cross
Color filter-B	3200K	3200K	3200K	3200K
Color filter-C	4300K	4300K	4300K	4300K
Color filter-D	6300K	6300K	6300K	6300K
Color filter-E	8000K	8000K	8000K	8000K
ND filter-1	Clear	Clear	Clear	Clear
ND filter-2	1/4 ND	1/4 ND	1/4 ND	1/4 ND
ND filter-3	1/8 ND	1/8 ND	1/8 ND	1/8 ND
ND filter-4	1/16 ND	1/16 ND	1/16 ND	1/16 ND
ND filter-5	1/64 ND	1/64 ND	1/64 ND	1/64 ND
Servo filter unit	Yes	Yes	Yes	Yes
Sensitivity (Typical)	F8.0 at 2000 lx (3200K, 89.9% reflectance)	F10.0 at 2000 lx (3200K, 89.9% reflectance)	F10.0 at 2000 lx (3200K, 89.9% reflectance)	F10.0 at 2000 lx (3200K, 89.9% reflectance)
Minimum illumination	7.8 lx (F1.4, +18dB gain up)	5 lx (F1.4, +18dB gain up)	5 lx (F1.4, +18dB gain up)	5 lx (F1.4, +18dB gain up)
S/N	65dB	65dB	65dB	65dB
Horizontal resolution	900TVL	700TVL	900TVL	700TVL
Vertical resolution	400TVL 450TVL (with EVS or Super EVS)	400TVL 450TVL (with EVS or Super EVS)	400TVL 450TVL (with EVS or Super EVS)	400TVL 450TVL (with EVS or Super EVS)
Geometric distortion	Below measurable level (w/o lens)	Below measurable level (w/o lens)	Below measurable level (w/o lens)	Below measurable level (w/o lens)
Shutter speed selection	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000	1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000
Gain selection	-3dB, 0dB, +3dB, +6dB, +9dB, +12dB, +18dB	-3dB, 0dB, +3dB, +6dB, +9dB, +12dB, +18dB	-3dB, 0dB, +3dB, +6dB, +9dB, +12dB, +18dB	-3dB, 0dB, +3dB, +6dB, +9dB, +12dB, +18dB
Clear scan selection	30.4—7000Hz	30.4—7000Hz	60.1—7000Hz	60.1—7000Hz
Modulation depth at 5MHz	80% (Typical)	80% (Typical)	80% (Typical)	80% (Typical)
Power consumption (with BVP-950)	20W	20W	20W	20W
Operating temperature	-20 to +45 °C (-4 to +113 °F)	-20 to +45 °C (-4 to +113 °F)	-20 to +45 °C (-4 to +113 °F)	-20 to +45 °C (-4 to +113 °F)
Storage temperature	-20 to +50 °C (-4 to +122 °F)	-20 to +55 °C (-4 to +122 °F)	-20 to +50 °C (-4 to +122 °F)	-20 to +50 °C (-4 to +122 °F)

Optinal Accessories



BVF-7700
7-inch Electronic Color Viewfinder



BVF-77
7-inch Electronic B/W Viewfinder



BVF-55
5-inch Electronic B/W Viewfinder



BVF-10
1.5-inch 4:3 B/W Viewfinder



BVF-20W
2.0-inch 16:9 B/W Viewfinder



BVF-C10W
1.35-inch 16:9 Color Viewfinder



BKP-7911
Script Holder



BKP-7912
Script Holder



CAC-6
Return Video Selector



CAC-12
Mic Holder



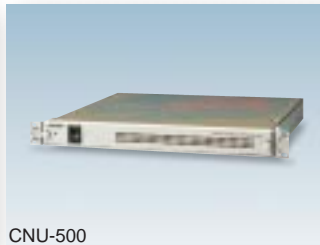
CCU-700A
Camera Control Unit



CCU-550 with BKP-5973
Camera Control Unit



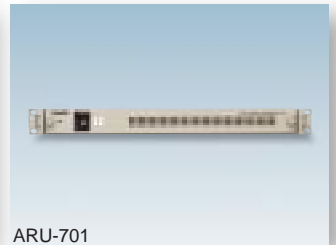
CNU-700
Camera Command Network Unit



CNU-500
Camera Command Network Unit



VCS-700
Video Selector



ARU-701
Aspect Ratio Converter Unit



ARU-702
Aspect Ratio Converter Unit



RM-B150
Remote Control Unit



RCP-700
Remote Control Panel



RCP-701
Remote Control Panel



RCP-720
Remote Control Panel



RCP-721
Remote Control Panel



RCP-740
Remote Control Panel



RCP-741
Remote Control Panel

SONY

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