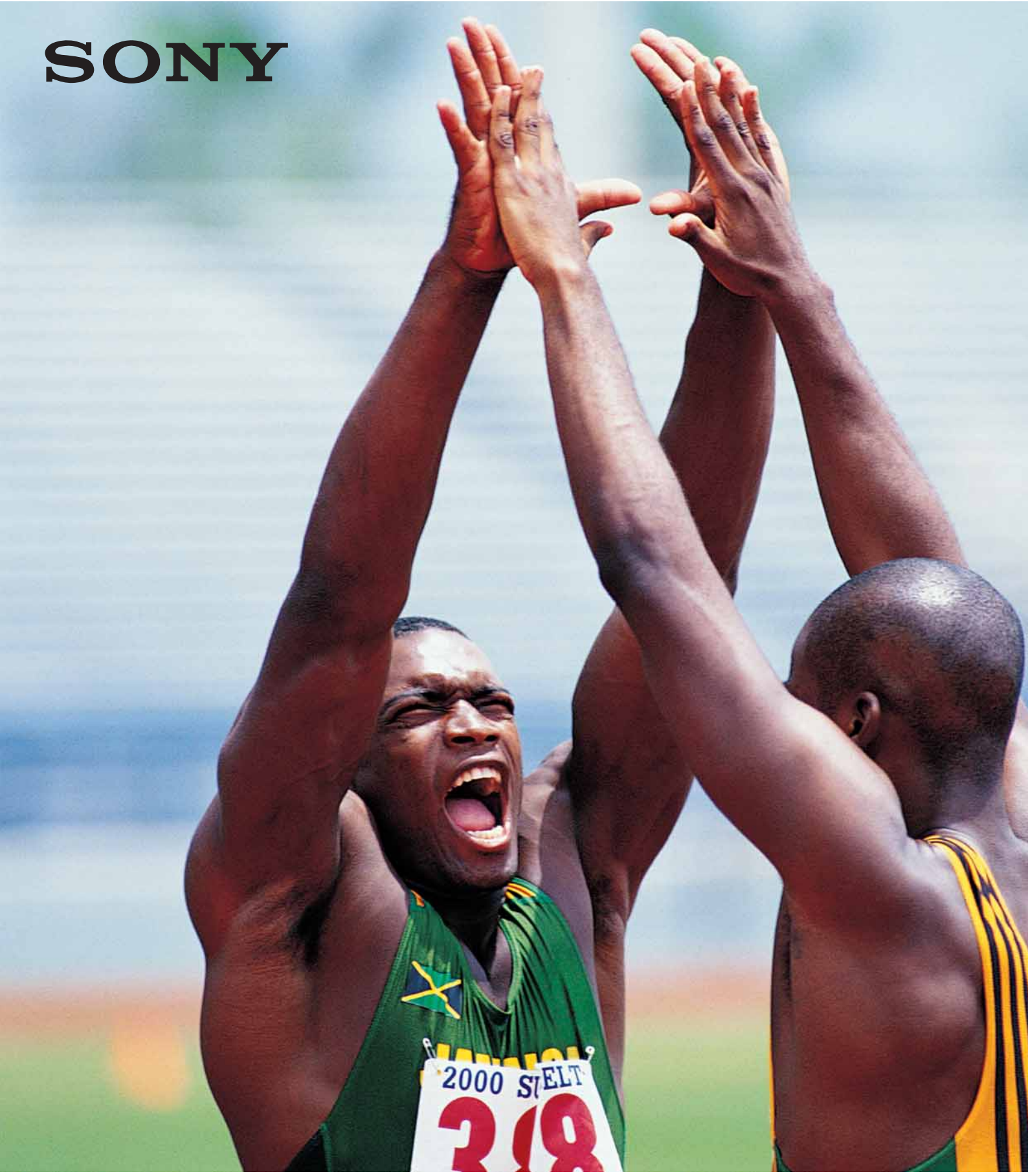
SONY



BVP-E30 Series

SDTV Portable Cameras

www.sonybiz.net/live

BVP-E30 Series

Experience **the Superb Picture Quality** of Sony's 14-bit SDTV Portable Cameras

The BVP-E30P/E30WSP digital portable cameras are the next generation of Sony's BVP Series. Specifically designed for even greater picture quality and enhanced operational convenience, there are two different cameras available: the BVP-E30P 4:3 model and the BVP-E30WSP 16:9/4:3 switchable model. Both models use lead-free solder and no halogenated flame-retardants are used in the printed wiring boards, making the BVP-E30P/E30WSP highly eco-friendly cameras.

At the heart of the outstanding picture performance delivered by the BVP-E30 Series are the field-proven Power HAD™ EX CCDs and a totally new 14-bit A/D conversion circuit. These core devices offer switchable operation between progressive and interlace scanning while also giving excellent sensitivity, noise, and smear performance. A range of sophisticated features is incorporated in the BVP-E30 Series, providing highly creative yet easy-to-use functions. In addition, the BVP-E30 Series has outstanding system versatility. When combined with the Sony CA-590P Camera Adaptor and CCU-590P or CCU-790P Camera Control Unit, both models integrate seamlessly into current Sony camera systems from the very basic to the most complex. What's more, the BVP-E30 Series is compatible with the WLL-CA55 Wireless Camera Transmitter, providing the exceptional mobility to cover live events without the hassle of cables.

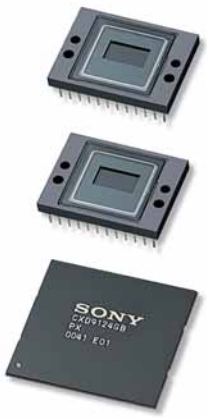
With excellent performance, a range of sophisticated features, and system versatility, BVP-E30 Series digital portable cameras are an ideal and affordable solution for the origination of a wide range of SDTV programmes in the studio and for outside broadcasts.

Features

Excellent Picture Quality

Power HAD EX CCDs

The BVP-E30 Series is equipped with three state-of-the-art 2/3-inch Sony Power HAD EX CCDs for enhanced horizontal resolution of 900 TV lines. This CCD imager also achieves a high sensitivity of F11, an excellent S/N ratio of 65 dB (typical) and a remarkably low smear level of -145 dB – allowing the BVP-E30 Series to achieve spectacular pictures even in the most difficult shooting environments.



Power HAD EX CCD and an Innovative LSI

14-bit A/D Conversion

The BVP-E30 Series incorporates a high-resolution 14-bit A/D conversion circuit so that images captured by the Power HAD EX CCDs are processed with four times the precision of 10-bit A/D converters. In particular, this high-resolution A/D conversion allows the contrast to be reproduced more faithfully in both mid-to-dark-tone and bright areas of the picture.

Advanced Digital Signal Processing (ADSP)

The ADSP of the BVP-E30 Series uses more than 30 bits in its nonlinear process, minimising rounding-off errors to maintain the high quality of the Power HAD EX CCDs. The ADSP also enables highly sophisticated image controls, such as knee saturation, adaptive highlight control and multi-matrix functions.

Stable Image Correction

Thanks to the inclusion of the 14-bit A/D converter, functions such as white balance, 3D white shading, and linear saturation can be digitally corrected, allowing for greater stability. For example, the BVP-E30 Series replaces the traditional use of vertical and horizontal saw-tooth and parabola waveforms for white-shading correction with digital 3D white-shading correction. A digital 3D multi-zone system, using numerous data points over the raster, creates a smooth correction topography that can handle the variations over many more lens types.

Lens, viewfinder and camera adaptor are optional

Creative Image Control

Knee Saturation Control

Traditionally, shooting very bright portions of an object (such as key light reflections from a person's forehead) can often reduce colour saturation and change the hue. The BVP-E30 Series adopts a knee saturation control function in which this 'wash-out' effect on saturation and hue change is reduced to a minimum, providing a far more natural colour reproduction in areas of high light.

Low Key Saturation

With conventional cameras, low-light areas can be subject to a reduction in saturation. This can result in the colour in these areas being “washed out”. The low key saturation function on the BVP-E30 Series eliminates this problem by optimising the amplification of colour saturation at low light levels, providing more natural colour reproduction.

Knee Saturation Off

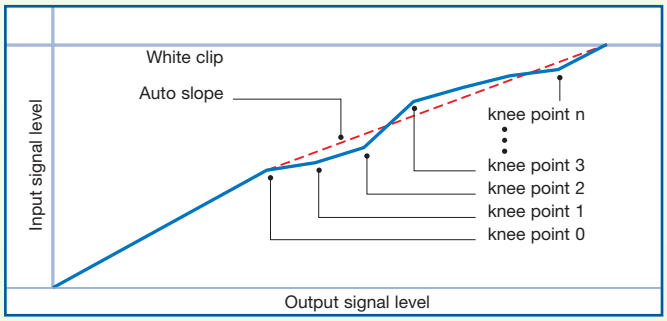
Knee Saturation On

Low Key Saturation Off

Low Key Saturation On

Adaptive Highlight Control
(Auto Knee Mode)

In conventional cameras, only a single knee-point/slope is available for control over highlights. The BVP-E30 Series, however, provides multiple knee-points/slopes for superb overexposure control. The camera detects the highly-lit areas of a scene and automatically sets and optimises multiple knee points/slopes accordingly. This allows the reproduction of extremely difficult images (such as an interior scene with 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.



Knee Curve Image

Multi-Matrix Function

The multi-matrix function of the BVP-E30 Series allows colour adjustments to be applied over the colour range 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 modified. This function is especially useful when only the hue of certain colours needs to be adjusted for special-effects work.

Enhanced Vertical Detail
(Non-Additive Mix)

In conventional cameras, vertical detail signals are created using the Y-channel, G-channel or, more commonly, the R/G channels combined. Each method has its limitations, such as when the colour channel selected to create the detail signal is at a low level. The BVP-E30 Series uses an adaptive image-enhancement method. This creates detail signals from each of the R/G/B components of the video signal, compares them, and then automatically selects the channel with the highest contrast level for use as the detail signal (Non-Additive Mix). This avoids the conventional restrictions of image enhancement observed above. The BVP-E30 Series can automatically correct the enhanced vertical detail but, if required, operators may manually select from the Y, G, or R/G image enhancement modes.

Enhanced Vertical Detail (Non-Additive Mix) Off

Enhanced Vertical Detail (Non-Additive Mix) On

Adaptive Detail Control Off

Adaptive Detail Control On

Multi-matrix Off

Multi-matrix On

Low Light Shooting

The BVP-E30 Series offers two convenient functions for capturing clear images in low-light environments – a slow shutter mode and gain function – which can be used separately or together. The slow shutter mode allows the charge accumulation period of the CCD to be extended to seven frames. The gain function allows the camera gain to be boosted to +42 dB. When used together, the camera offers a minimum illumination of 0.035 lx.

Adaptive Detail Control

The adaptive detail control automatically optimises the amplitude of the detail signal for high-contrast picture edges. It also eliminates digital aliasing effects, offering very “natural” image enhancement during scenes in which there are severe changes in contrast.

Triple Skin Tone Detail Control

The BVP-E30 Series Skin Tone Detail function enables control of image enhancement within user-specified colour tones. The BVP-E30 Series allows enhancement to be set independently for up to three distinct colour and/or hue ranges. Skin Tone Detail correction is conventionally used to reduce the amount of detail control in areas of skin tone. With the BVP-E30 Series, correction is not restricted to skin tone and can be applied to any area of colour. Image enhancement within the three areas can be increased or decreased relative to the overall image enhancement of a given scene.

Electronic Soft Focus

The BVP-E30 Series' electronic soft focus applies a similar effect to that of an optical soft-focus filter - but in a much more convenient way. Rather than increasing the level of the detail signal, this function reduces it - providing a picture that is "softer" than that achieved when detail is switched off completely. Electronic soft focus is also effective when used in conjunction with skin-tone detail to only change the sharpness within a specific colour or hue range.

Operational Convenience

❶ Electronic and Optical CC Filter

The BVP-E30 Series cameras come equipped with electronic Colour Correction, which replaces the need for optical Colour Correction (CC) filters. So in the case of the BVP-30P, all the filters in the filter wheel can be Neutral Density (ND) types, providing the operator with greater flexibility in depth of field and exposure control. The BVP-E30WSP camera has dual filter wheels with both ND and CC filters, which gives operators the choice of correcting colour temperature optically or electronically, according to their needs. The filter of the BVP-E30WSP is servo-controlled, while the BVP-E30P is equipped with a manual filter wheel.

❷ Assignable Switch

The BVP-E30 Series has a dedicated 'assignable switch' available for functions frequently used in the field. Located near the filter wheel dial, this switch allows functions such as 5600K On/Off, 4:3/16:9 mode selection (BVP-E30WSP only), and ATW On/Off to be assigned as required. Adding further operational convenience, the return viewfinder and intercom buttons located on the camera handle can be assigned to the servo zoom in/out function*. Assignment of all of the above functions is implemented via the menu system.

* Only lenses with a digital interface support this function.

❸ Ergonomic Handle

A newly designed carrying handle offers improved operator comfort and ensures optimum balance of the camera. The handle is made of light but highly durable die-cast material and includes a non-slip leather finish. In addition, the sophisticated design allows easy operation when the camera is docked with a camera adaptor, dockable VTR, and even with a studio-type lens and large viewfinder.

❹ Auto Tracing White Balance (ATW)

The BVP-E30 Series features a convenient Auto Tracing White Balance (ATW) function, which automatically adjusts white balance as lighting conditions change. ATW is useful when shooting in rapidly changing lighting conditions, such as when moving from indoor to outdoor locations.

❺ File Operation Using Memory Stick™ Media Card

MEMORY STICK

The BVP-E30 Series incorporates the Sony Memory Stick system for the storage and recall of setup parameters. This is an effective, easy-to-use system for storing and recalling camera parameters for individual scenes or the individual preferences of a camera operator, including the settings of assignable switches.

6 Adjustable Shoulder Pad

The position of the shoulder pad on the BVP-E30 Series cameras can be easily adjusted without using a screwdriver - both forwards and backwards - to always provide the operator with a comfortable and well-balanced camera position, even when docked with a range of lenses or camera adaptors.

7 Backlit Rear Panel

The rear panel of the CA-590P is backlit, allowing operators to see switch positions in dark environments.

A versatile intercom system includes independent engineering and production talkback, two-channel programme audio and tracker talkback.

System Versatility

The BVP-E30 Series is compatible with a variety of peripherals including camera adaptors, camera control units, remote controllers, and a wireless camera transmitter. This allows operators to flexibly configure the system according to their needs both in the studio and out in the field.

Triax CCU Operation

CCU-790P Camera Control Unit
CCU-590P Portable Camera Control Unit

By attaching the CA-590P Triax Camera Adaptor, the BVP-E30 Series can be remotely controlled from two types of camera control unit – the full-size CCU-790P and half-rack CCU-590P. The wideband transmission system used in these units maintains the high picture performance of the BVP-E30 Series, across cable runs of up to 2000m*1 via a ø 14.5mm cable (1000m via ø 8.5mm cable) with return video and remote power. In addition, the Ethernet interface (100Base-T) built into both CCUs allows the camera to be controlled over an IP network.

*1 Applies to CCU-790P only.

The CCU-790P and CCU-590P triax systems support the following features:

- Wideband transmission (10 MHz for Y and 4.5 MHz for R-Y/B-Y)
- Long-distance transmission

  Up to 2000 m via a ø 14.5 mm cable (CCU-790P)

  Up to 1400 m via a ø 14.5 mm cable (CCU-590P)
- Three SDI or analogue composite outputs
- Up to three additional SDI outputs (CCU-790P only)*2
- One component output (Y/R-Y/B-Y or G/R/B)
- Four inputs for return video (RET-1/2: analogue composite, RET-3/4: SDI)
- Built-in Ethernet interface (100Base-T) for future use
- RM-B750 Remote Control Unit attach capability on the front panel (CCU-590P only)
- Teleprompter video
- Support for two-channel intercom systems (four-wire/RTS/Clearcom)
- Two-channel programme audio
- Two-channel microphone system (two XLR connectors)

*2 Available only when SDI out is selected for output 1.

Wide Band
Triax Transmission
System

CCU-590P
(an optional RM-B750 is attached)

CCU-590P
Rear panel

CCU-790P

CCU-790P
Rear panel

Multi-Camera Control

MSU-900 Master Setup Unit
MSU-950 Portable Master Setup Unit

The MSU-900/950 Master Setup Unit is a central control panel used for the adjustment of camera parameters in a multi-camera system.

The MSU-900/950 is connected to each camera control unit in the system via the CNU-700 Command Network Unit. The CNU-700 in turn allows the control parameters of each camera to be delegated to the control buttons and knobs on the connected Master Setup Unit – bringing control of the entire camera system to your fingertips.

- Central control of camera parameters for the entire camera system
- Picture and waveform monitor switching
- Precise picture adjustment
- Built-in 6.5-inch LCD display for clear viewing of adjustment parameters during operation
- Memory Stick slot for storing/retrieving files
- Built-in Ethernet interface (100Base-T) for future use

Wireless Transmission System

WLL-CA55 Wireless Camera Transmitter
WLL-RX55 Wireless Camera Receiver

By combining the BVP-E30 Series with Sony wireless camera systems WLL-CA55 and WLL-RX55, high-quality and stable wireless transmission for video/audio becomes available, providing the extra mobility for gathering news in the field or covering sports, concerts and other live events. This system also offers the transmission of camera control, intercom, and tally signals*1 – allowing highly mobile yet creative shooting opportunities. The use of a 2.4-GHz band transmission frequency allows operation of the wireless camera system without the need for a license in most countries.

The wireless camera system supports the following features:

- Diversity reception
- MPEG-2 video compression and MPEG-1 Layer I/II 48-kHz audio
- COFDM for stable transmission
- Time interleave
- 2.4 GHz band transmission frequency allows a license-free operation
- Secure encryption key
- Flexible channel selector (up to seven simultaneous channels)
- Wireless camera control capability.

*1 An optional WRR Series wireless microphone tuner and a WRT Series wireless microphone transmitter are required for the wireless transmission of camera control, intercom, and tally signals.

MSU-900

MSU-950

Optional Accessories

BVF-55CE
5-inch* B/W Viewfinder

BVF-10CE
1.5-inch* Electronic B/W CRT Viewfinder

BVF-20WCE
2-inch* Electronic B/W CRT Viewfinder

CA-590P
Camera Adaptor

CCU-790P
Camera Control Unit

* Viewable area measured diagonally.

CCU-590P
Camera Control Unit

WLL-CA55
Wireless Camera Transmitter

WLL-RX55
Wireless Camera Transmitter (an optional RM-B750 Remote Control Unit is attached)

CNU-700
Camera Network Unit

VCS-700
Video Selector

MSU-900
Master Setup Unit

MSU-950
Master Setup Unit

RM-B750
Remote Control Unit

RM-B150
Remote Control Unit

RCP-700/701
Remote Control Panel (photo shows RCP-700)

RCP-750/751
Remote Control Panel (photo shows RCP-750)

VCT-14
Tripod Adaptor

CA-905F
Large Lens Adaptor and 7-inch type Viewfinder Saddle

(photo shows CA-905F/BKP-9057 with other Sony Camera)

BKP-9057
7-inch type Viewfinder Saddle

MSH-32/64/128
Memory Stick

WRR-862B/855B
Wireless Microphone Receiver

(photo shows WRR-855B)

WRT-8B/847B/822B
Wireless Microphone Transmitter

(photo shows WRT-8B)

ECM-678
Shotgun Microphone

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Recognising that every company and every challenge is unique, we offer a complete and comprehensive range of services all the way through consulting, planning, financing, implementation, training, servicing, maintenance and support. Choose exactly what's right for you, when and where you need it.

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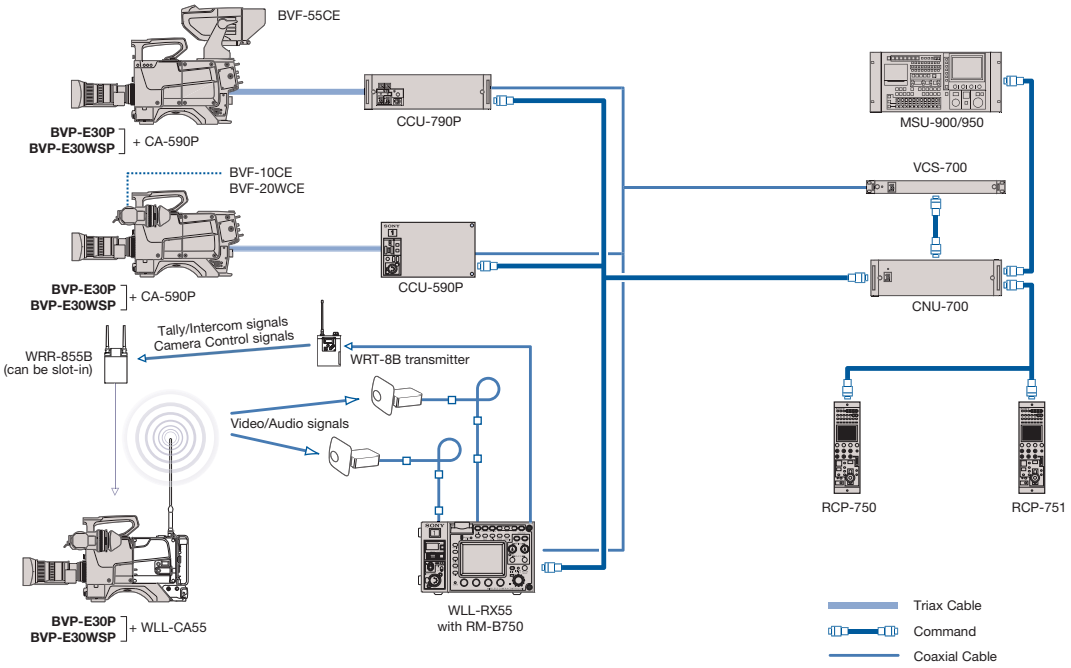
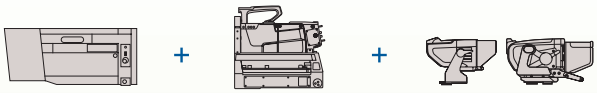
Sony Services

System Configurations



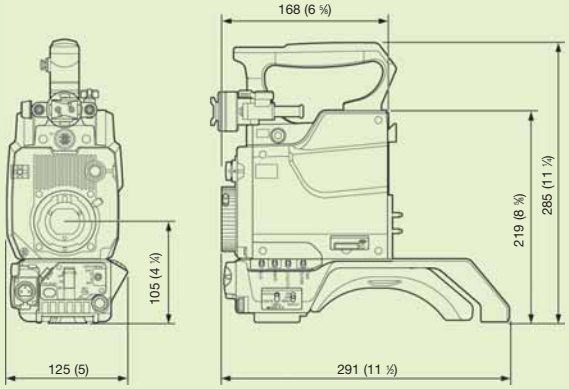
BVP-E30P Series Configured with Studio Lens



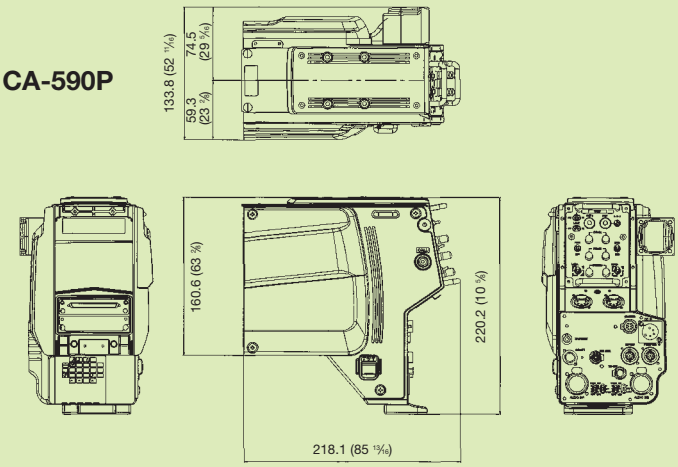
Studio Lens + BVP-E30P/WSP + CA-590P + CA-905F + BVF-55 or the BVF-77 with BKP-9057

Dimensions Unit: mm (inches)

BVP-E30P



CA-590P



Specifications

		BVP-E30WSP	BVP-E30P
General			
Power consumption		13 W	
Operating temperature		-20 to +45 °C (-4 to +113 °F)	
Storage temperature		-20 to +60 °C (-4 to +140 °F)	
Dimensions (W x H x D)		125 x 285 x 291 mm (5 x 11 ¼ x 11 ½ inches)	
Mass		Approx. 2.5 kg (5 lb 8 oz) (not including viewfinder)	
Camera			
A/D conversion		14 bits	
Optical system		F1.4 prism	
Image device		3-chip 2/3-inch type Power HAD EX CCD	
Total picture elements (H x V)		1038 x 1188	
Smear (typical)		-145 dB	
Scan format		50i/25PsF	
Built-in filters		1: CLEAR, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND (BVP-E30/E30P/E30WS/E30WSP) A: CROSS, B: 3200K, C: 4300K, D: 6300K (BVP-E30/E30WS/E30WSP)	
Lens mount		Special bayonet mount (B4)	
Horizontal resolution (centre)			
16:9		700 TV lines	N/A
4:3		700 TV lines	900 TV lines
Modulation depth (centre)			
16:9		80%	N/A
4:3		60%	80%
Vertical resolution		480 TV lines (530 TV lines with EVS)	
S/N ratio (typical)		65 dB	
Sensitivity (2000 lx, 3200K, 89.9% reflectance) (typical)		F11	
Gain selection		-3, 0, +3, +6, +9, +12, +18, +24, +30, +36, +42 dB	
Set-up memory card		Memory Stick	
Shutter speed		1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000 (s)	
Clear scan (PsF mode)		1/25* to 1/6000 (s)	
Interface			
Input	Microphone	XLR 3-pin, -60 dBu	
Output	Test out	BNC, 1.0 Vp-p, 75 Ω, unbalanced	
Others	Lens	12-pin	
	Viewfinder	20-pin	
	Digital Interface	68-pin	
	Analogue Interface	68-pin	
Supplied Accessories			
		Operation manual (x1), CD-ROM Operating instructions (x1), Label for assignable switch (1 set)	

*1/30 to 1/60 and 1/25 to 1/50 are on PsF mode

eco info

- Lead-free solder is used for soldering
- Halogenated flame retardants are not used in the cabinets and the printed wiring boards

	CA-590P
General	
Power consumption	8 W
Operating temperature	-20 to +45 ˚C (-4 to +113 ˚F)
Storage temperature	-20 to +50 ˚C (-4 to +122 ˚F)
Dimensions (W x H x D)	120 x 211 x 202 mm (4 3/4 x 8 3/8 x 8 inches)
Mass	2.8 kg (6 lb 3 oz)
Input/output connectors	
Audio input (CH-1/CH-2)	XLR-3-pin, female, 600 Ω, balanced
DC input	XLR-4-pin, DC 10.5 to 17 V
DC output	4-pin, DC 10.5 to 17 V, max. 1.5 A
Return	BNC, 1.0 Vp-p, 75 Ω
Prompter	BNC, 1.0 Vp-p, 75 Ω
Return control	6-pin
Earphone	Mini-jack, 8 Ω
Camera interface	68-pin
CCU	Triax
Intercom (1, 2)	XLR-5-pin, female
Remote	8-pin
Tracker	10-pin
Supplied Accessories	
	Carrying belt (1), cable holder (2), M3 x 6 screws (4), operation manual (1)

	CCU-590P	CCU-790P
General		
Power requirements	AC 100 to 240 V, 50/60 Hz, maximum 1.8 A	AC 110 to 120 V/220 to 240 V, 50/60 Hz
Operating temperature	-10 to +40 ˚C (+14 to +104 ˚F)	0 to +45 ˚C (+32 to +113 ˚F)
Dimensions (W x H x D)	200 x 124 x 365 mm (7 7/8 x 5 x 14 3/8 inches)	424 x 133 x 394 mm (16 3/4 x 5 1/4 x 15 5/8 inches)
Mass	Approx. 5.5 kg (12 lb 2 oz)	Approx. 12 kg (26 lb 7 oz)
Signal inputs		
Reference	BNC (loop-through), VBS/BS, 1.0 Vp-p, 75 Ω	
Return (1, 2)*1	BNC (loop-through), VBS, 1.0 Vp-p, 75 Ω	
SDI return (3, 4)	BNC, SDI/VBS selectable VBS: 1.0 Vp-p, 75 Ω SDI: SMPTE 259M	
Prompter*1	BNC (loop-through), VBS, 1.0 Vp-p, 75 Ω	
Signal outputs		
VBS/SDI	BNC (x3), VBS/SDI selectable VBS: 1.0 Vp-p, 75 Ω SDI: SMPTE 259M	
SDI	—	BNC (x3)*2
Analogue component	BNC (x3 for 1 set), Y/R-Y/B-Y or G/R/B switchable Y: 1.0 Vp-p, 75 Ω, R-Y/B-Y: 525 mVp-p, 75 Ω R/G/B: 700 mVp-p, 75 Ω	
PIX	BNC, 1.0 Vp-p, 75 Ω	
WF	BNC, 1.0 Vp-p, 75 Ω 700 mVp-p, 75 Ω	
WF mode	4-pin	
Audio	XLR-3-pin (x2), 0 dBu/-20 dBu, balanced	
Sync	BNC, 0.3 Vp-p, 75 Ω	
Camera input/output signals		
Camera	Triax	
Coax	BNC, 75 Ω	
Remote	8-pin	
Ethernet	IEEE 802.3 10BASE-T, IEEE 802.3u 100BASE-TX	
Intercom/tally/programme	D-sub 25-pin 4W/RTS Tally: DC 24 V, TTL level or contact selectable	
Microphone remote	D-sub 15-pin	
Intercom (front)	XLR-5-pin	
Supplied Accessories		
	AC power cord (1), AC power plug holder (1), 4-pin connector (1), number plate (1), operation manual (1)	

*1: The same signal is input to the RET-2 and the PROMPTER connectors.
*2: Available only when SDI out is selected for VBS/SDI output 1.

SONY

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