

**SONY**<sup>®</sup>

NTSC

**BETACAM SP**<sup>™</sup>

Betacam SP One-piece Camcorder

**UVW-100B**



**Power HAD**



# Betacam SP<sup>®</sup>

## The Universal Choice

The Sony UVW Series are now in use around the world in a wide range of professional video applications, owing to the powerful advantages of the Betacam SP format with its excellent component recording quality.

To extend the performance and functionality of the UVW Series, Sony now introduces the UVW-100B - an enhanced version of the affordable Betacam SP one-piece camcorder. Incorporating the Power HAD™ CCD sensor, developed from Sony's latest CCD technology, the UVW-100B achieves a dramatic reduction of vertical smear (approximately 1/10 that of the

UVW-100) and high sensitivity of F11.0. In addition, the UVW-100B has a 26-pin VTR interface, allowing component, Y/C, as well as composite signals to be fed to an external VTR for simultaneous recording. Topping off the camcorder is the field proven DXF-601 Viewfinder and the new VCL-714BX, Zoom Lens.

With these enhanced features and sophisticated design, the UVW-100B will surely be a top choice among professionals seeking a high-quality acquisition tool.







• **LCD Multiple Display**  
An 8-digit LCD display shows time data, warning indications and video status. Battery status and two channel audio level are also shown in a bargraph meter. While in the recording mode, remaining tape quantity is shown on the LCD display.

## Viewfinder Playback

The recorded luminance signal or chrominance (CTDM) signal is selectable for replay in monochrome through the viewfinder. Simultaneous audio playback is also available through the built-in ear speaker on the side panel, or through an earphone connected to the earphone out.

## Recording Review Function

By simply pressing the Rec Review button while in the Rec Pause mode or in the Stop mode, the UVW-100B plays back two seconds of the last scene and stops at the end of the previous recording. The Rec Review time is extended up to a maximum of approximately ten seconds if the Rec Review button is pressed for longer than two seconds.

## Back Space Editing

The UVW-100B provides a back space editing capability for smooth transitions between scenes while recording. Use of the time code regeneration function with the recording review function enables the UVW-100B to record continuous time code at any scene transition point. If the power is turned off while in the Rec Pause mode, the UVW-100B automatically resumes the Rec Pause mode at the last editing point when repowered. This ensures a smooth transition in the editing point while keeping power consumption to a minimum.

## Built-in Time Code Generator/ Reader

The Betacam SP format has an independent time code track so that one of the longitudinal audio tracks does not have to be sacrificed for time code recording. The UVW-100B is equipped with a time code generator and reader. The time code conforms to the SMPTE standard for LTC (Longitudinal Time Code) and User-bit. For multi-camera operation, time code genlock to an external time code is provided. Variable functions such as REC RUN/FREE RUN, PRESET/ REGENERATION can easily be set.

## Real Time/ Date Recording Function

The UVW-100B can record actual (real) time and date on the LTC (Longitudinal Time Code) track of the tape. The real time/ date is switchable with the time code/user bit. Even after the power is turned off, the actual time/date data and time code are backed-up in memory by a lithium battery.

## Audio System

Recording inputs to the two longitudinal audio tracks are via XLR-type connectors. The recording level is independently adjustable for each track and Dolby™ C-type Noise Reduction can be switched in.

## Audio CH-1 Level Control

In addition to the level controls for Audio CH-1 and CH-2 located near the LCD display, an additional level control for Audio CH-1 is now located near to the viewfinder to allow the operator to control the recording level of this channel while shooting.



## New Standard Accessories

### VCL-714BX Zoom Lens

The VCL-714BX, with a zoom range of up to x 14, is the standard lens for the UVW-100B. Lens flare is minimized by an improved multiple coating to the surface of the lens. Mechanical noise from the servomechanism while zooming is also suppressed.

### DXF-601 Viewfinder



The DXF-601 is a 1.5-inch viewfinder for professional use. Special attention was paid to the ergonomics of this viewfinder to ensure comfortable and easy operation.

#### (1) Diecast Aluminum Body

A diecast aluminum body makes the DXF-601 very rugged and durable.



### (2) Adjustment of the Viewfinder Position

The viewfinder's position on the camcorder can be adjusted in a broad horizontal plane according to the operator's preference.

### (3) Easy to See

The CRT used in the DXF-601 viewfinder achieves a remarkable 600 TV lines of horizontal resolution. In addition, the advanced phase-corrected peaking circuit increases horizontal detail in the viewfinder signal, thus balancing level and phase.

The peaking level of the viewfinder can be finely adjusted to accommodate the videographer's preferences.

The large diameter eye cup not only reduces eye strain, but also simplifies focusing. A wide range of diopter adjustments (-3 to 0) is provided to compensate for differences in eye sight.



### (4) Internal Indication Lamps

Internal indication lamps for REC/TALLY, BATTERY, SHUTTER and GAIN UP are placed close to the viewfinder screen for easy reading.

### (5) External REC Tally

The external REC tally light is bright enough to be visible even under daylight shooting conditions.

### (6) Quick-start Viewfinder

Approximately one second after the power is turned on, the viewfinder is ready for operation.

## System Versatility

### 26-pin VTR Interface Capability



With the 26-pin VTR interface, the UVW-100B can feed component and Y/C as well as composite signals to another VTR. This function enables simultaneous recording by both the UVW-100B and an external VTR, thus allowing longer continuous recording time. The VTR functions such as start/stop can be controlled from the UVW-100B through

the 26-pin interface. To meet a variety of shooting needs, three recording modes -PARALLEL, INT ONLY, and EXT ONLY- can be selected with the VTR TRIGGER when the UVW-100B is connected to an external VTR. Furthermore, external VTR status such as REC, TALLY, and ALARM will be shown in the viewfinder.

## Full Color Picture Playback with the Optional VA-300 Playback Adapter



Full color picture playback is available in the field by connecting the optional VA-300 playback adapter to the 20-pin interface of the UVW-100B. The VA-300 provides a composite video output and, with an optional RF Adapter RFU-95 Series fitted, a UHF/VHF signal is available. The VA-300 also provides outputs from two audio channels. Furthermore, for various field applications and microwave transmission, a component TBS function is built into the VA-300.

## Easy System Integration with Anton Bauer® Equipment

In addition to a selection of optional Sony batteries, the Anton Bauer Digital Magnum Battery can also be used with the UVW-100B. With this battery, an accurate indication of the amount of remaining battery power is displayed on the LCD panel as well as through the viewfinder. The optional Anton Bauer Ultralight System is also easy to integrate. With this system, lighting power is turned on and off via the VTR START/ STOP function.





High Quality  
Camera

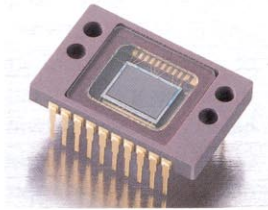
Low Smear and High Sensitivity  
(Power HAD Sensor)

The introduction of Hyper HAD™ sensor, with its On-Chip-Lens layer technology, is well known in the market. However, Sony has now advanced this technology even further with the introduction of Power HAD sensor.

The UVW-100B incorporates three 1/2-inch Power HAD CCD sensors that offer the following advantages.

• Drastic reduction of vertical smear

Sony improved the structure of the Interline Transfer (IT) CCD pixels to prohibit the unwanted flow of electric charges, the biggest cause of smear phenomenon. By drastically reducing vertical smear, the videographer now has more creative freedom when shooting a high-lighted subject.



1/2-inch Power HAD sensor



1/2-inch Hyper HAD sensor

• High Sensitivity

The UVW-100B achieves the high sensitivity of F11.0 (at 2000 lx) and minimum illumination of 4.0 lx with F1.4, +18dB, which provides the opportunity to shoot under extremely low-light conditions without using the gain-up switch or a lighting system.

Automatic  
Adjustment Function

• Auto Tracing White Balance (ATW)

In addition to the auto white/black balance, the UVW-100B has the capability to adjust the white balance automatically in response to the surrounding light source changes. This ATW (Auto Tracing White Balance) function is useful when a quick move from an indoor to an outdoor location is required while shooting.

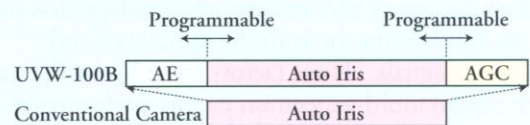
• Intelligent Auto Iris

The lens iris of the UVW-100B is factory preset to be controlled by an Intelligent Auto Iris function. This function is very convenient when there is an extreme difference between the brightness of an object and the background. With the conventional Auto Iris, if a subject is framed in a backlit situation or extremely bright lighting against a dark background, the subject is shown rather dark or too bright respectively. However, when in the Intelligent Auto Iris mode, the lighting condition is sensed and the lens iris is automatically adjusted for the proper exposure. If the conventional auto iris setting is preferable, the Intelligent Auto Iris function can be switched off.

• Total Level Control System (TLCS)

Even if the incoming light exceeds the limit of the automatic iris control, the UVW-100B sets the proper exposure by using the iris control in combination with AGC (Auto Gain Control) and CCD AE (Auto Exposure). The combination of these three functions is called Total Level Control System.

◆ Total Level Control System (TLCS)



(1) Automatic Gain Control (AGC)

In addition to the master Gain control, the UVW-100B incorporates Automatic Gain Control (AGC) to optimize the gain control setting in low-light shooting situations. When the iris F-stop reaches a predetermined minimum value, the AGC automatically sets the appropriate video recording level. The upper limit of the AGC can be set from 0dB to 18dB in 1dB steps. When operated in the auto iris mode, it is possible to preset the value of the F-stop at which the AGC function will operate.

(2) Automatic Exposure (AE)

Under very difficult lighting conditions the UVW-100B ensures the appropriate exposure with the Automatic Exposure (AE) function. The AE mode is a combination of automatic iris control and the variable speed electronic shutter. When the Iris F-stop reaches a predetermined maximum value, the electronic shutter automatically sets the proper exposure. The value of this F-stop number can be preset.



## Clear Scan

The UVW-100B is equipped with Sony Clear Scan™ (for shooting computer displays without horizontal bands appearing across the display screen. The shutter speed can be matched to the scanning frequency of the computer display ranging from 59.9 Hz to 200.3 Hz.

## Other Features

- Electronic Shutter [Shutter speed: OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000 (sec.)]
- Zebra video level indications
- Menu function for setting up the camera using the viewfinder screen
- Built-in color bar generator
- Built-in safety zone and center marker generator
- Supplied detachable shotgun type microphone
- Tape remaining and audio level indications in the viewfinder

## Betacam SP Component Recording Format

The UVW-100B is based on the Betacam SP format, universally recognized for its superior picture quality. The Betacam SP format uses component recording, in which the color information (R-Y/ B-Y) is time compressed and recorded on one track, using the CTDM (Compressed Time Division Multiplex) system while the luminance (Y) signal is recorded on a second track. The use of two separate tracks eliminates the cross color and cross luminance effects inherent in composite recording. Both tracks are recorded using high frequency FM carriers, a technology that provides very wide bandwidths for both the luminance and chrominance signals. These factors result in the Betacam SP format's superb multi-generation picture performance, a level of performance that is maintained during the recording process by the exclusive use of metal tape.

## Operational Convenience in Recording

## Compact, Lightweight And Well Balanced

The UVW-100B weighs approximately 7.3kg (16 lb 1 oz), complete with the viewfinder, battery, cassette and lens. The compact, lightweight design, attributable in part of the compact drum mechanism, makes the UVW-100B ideal for one-person operation. It is well balanced with a low center of gravity. Its shoulder pad is adjustable so the shooter can maintain optimum balance when using different lenses and battery systems. Owing to the low power consumption (20W), one fully charged NP-1B battery gives continuous operation for approximately 60 minutes.

## Full Function Control

Eject, Rewind, Play, Fast Forward, and Stop function buttons are located on the top of the camcorder and are covered with a lid to prevent accidental misoperation. While in the Rec mode, all the function buttons are automatically inhibited. The recording mode is activated with the trigger buttons on the front of the camera or on the zoom lens grip. With the optional RM-81 Remote Controller, the Start/Stop functions of the recording mode can be controlled.

## Warning Indications

Warning indications are displayed both in the viewfinder and LCD window. Warnings on RE, servo, humid, slack, tape before end, tape end, low battery and end of battery are superimposed on the viewfinder screen. An alarm tone is also audible through the built-in ear speaker to warn the operator.





## OPTIONAL ACCESSORIES



Battery Charger for up to four NP-1Bs  
**BC-1WD**



Battery Charger for up to four NP-1Bs and four BP-90As  
**BC-410**



Ni-Cd Rechargeable Battery  
**BP-90A**



Ni-Cd Rechargeable Battery  
**NP-1B**



Battery Case for BP-90A  
**DC-500**



Battery Case for NP-1B  
**DC-520**



Rechargeable Battery Pack  
**BP-L60/L90**



Battery Charger for BP-L60/  
BP-L90  
**BC-L100**



Battery Adaptor between  
UVW-100B and BP-L90/BP-L60  
**BKW-L601**



Attachment Kit to charge NP-1B  
with BC-L100  
**DC-L1**



Attachment Kit to charge BP-90A  
with BC-L100  
**DC-L90**



AC Power Adapter for UVW-100  
**CMA-8A**



Intercommunication Headset  
**DR-100**



Electret Condenser Microphone  
**ECM-670/672**



Condenser Microphone  
**C-74**



Microphone cable  
**EC-0.5C2**



Camera Mic Holder  
**CAC-12**



UHF Synthesized Transmitter  
**WRT-820**



UHF Synthesized Tuner  
**WRR-810**



1.5-inch Monochrome Electronic  
Viewfinder  
**DXF-601**



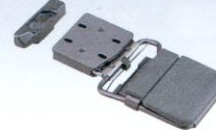
4-inch Monochrome Electronic  
Viewfinder  
**DXF-40B**



5-inch Monochrome Electronic  
Viewfinder  
**DXF-50B**



Tripod Adapter  
**VCT-U14**



Chest Pad  
**CAC-4**



Remote Controller  
**RM-81**



Playback Adapter  
**VA-300**



Connecting Cable(26-pin—26-pin)  
**CCZ-A2/A5/A10**  
(2 m/5 m/10 m)



Connecting Cable(14-pin/26-pin)  
**CCZQ-A2/A5/A10**  
(2 m/5 m/10 m)



2/3-inch Lens Mount Adapter  
**LO-32BMT**



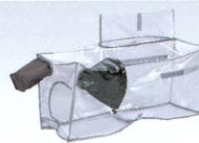
Flexible Cable Unit for VCL-714BX  
(Servo Zoom and Manual Focus)  
**LO-23**



Soft Carrying Case  
**LC-304SFT**



Carrying Case  
**LC-421**



Rain Cover  
**LCR-1**



Metal Particle Videocassette Tape  
**UVWT-10MA/20MA/30MA**

### ◆ LENSES (1/2-inch Format lens, hot-shoe type)



Standard Lens for UVW-100B  
**VCL-714BX**  
(F1.4, 7.5-105mm)

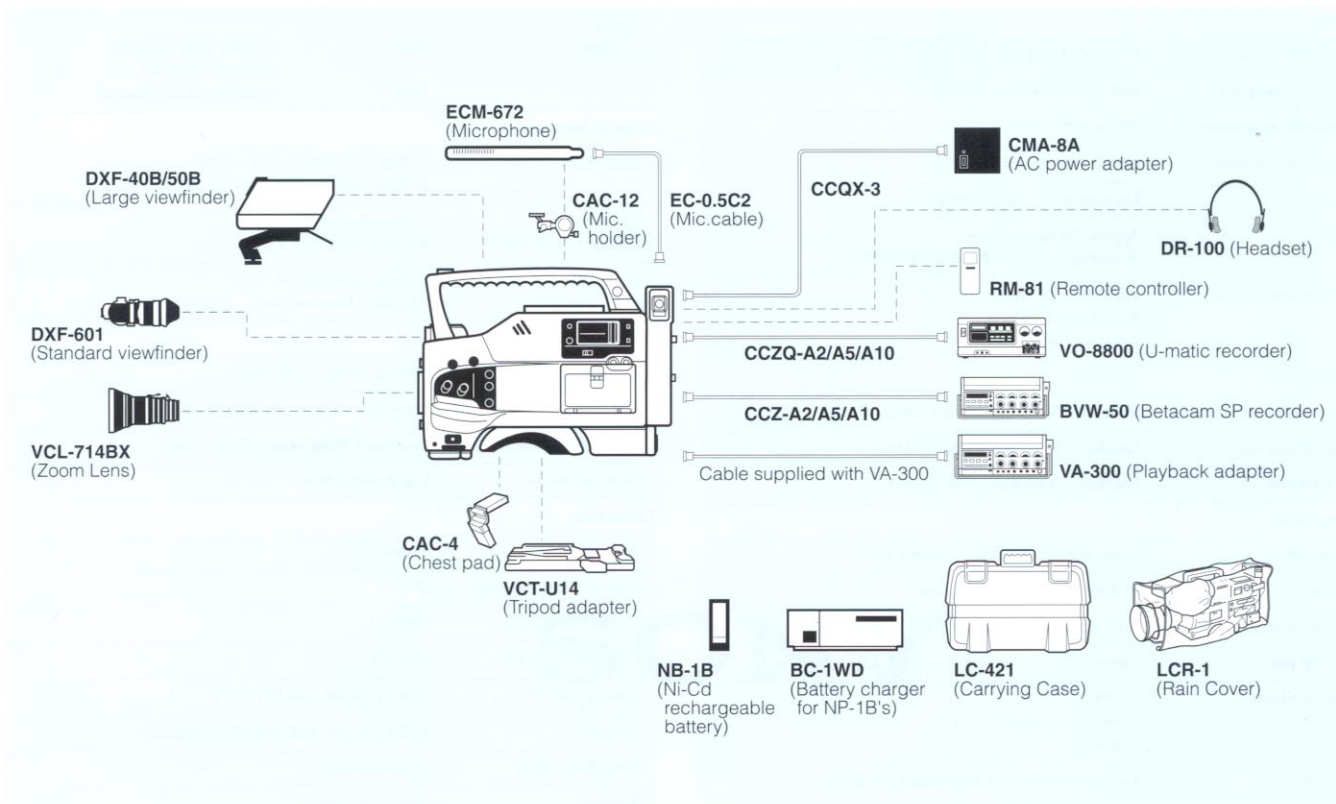


**VCL-713BX**  
(F1.4, 7.5-105mm)  
**PH15-7BIRS**  
(F1.4, 7-105mm)  
**YH17-7KRS**  
(F1.4, 7-119mm)



**S16 x 6.7BRM-18**  
(F1.4, 6.7-107mm)  
**S16 x 6.7BERM-18**  
(F1.4, 6.7-107mm)

## SYSTEM CONNECTION



## PRODUCT CONFIGURATIONS



|                          | UVW-100BF | UVW-100BK | UVW-100BL |
|--------------------------|-----------|-----------|-----------|
| ① Camcorder UVW-100B     | Supplied  | Supplied  | Supplied  |
| ② External Microphone    | Supplied  | Supplied  | Supplied  |
| ③ Shoulder Strap         | Supplied  | Supplied  | Supplied  |
| ④ Tripod Adapter VCT-U14 | Supplied  | Supplied  | Supplied  |
| ⑤ Viewfinder DXF-601     | Supplied  | Supplied  | Supplied  |
| ⑥ Zoom Lens VCL-714BX    | Supplied  | Supplied  | Option    |
| ⑦ Carrying Case LC-421   | Supplied  | Option    | Option    |



# SPECIFICATIONS

| General                  |  |
|--------------------------|--|
| Power requirements:      | DC 12V +5.0/-1.0V  |
| Power consumption:       | 20W (at 12V, without viewfinder)   |
| Operating temperature:   | 0°C to 40°C (32°F to 104°F)  |
| Storage temperature:     | -20°C to 60°C (-4°F to 140°F)  |
| Humidity:                | Less than 85% (relative humidity)  |
| Mass:                    | Approx. 7.3 kg (16 lb 2 oz)<br>(K package with NP-1B and UVWT-30MA)            |
| Dimensions (w/h/d):      | 120 x 209 x 342 (mm)<br>4 3/4 x 8 1/4 x 13 1/2 (inch)<br>(camcorder body only) |
| Tape speed:              | 118.6mm/s  |
| Playback/recording time: | More than 30min with UVWT-30MA   |
| Fast forward time:       | Less than 7.5min with UVWT-30MA  |
| Rewind time:             | Less than 5.5min with UVWT-30MA  |

| Camera head              |  |
|--------------------------|--|
| Image device:            | 3-chip 1/2-inch, Interline-Transfer CCD  |
| Optics:                  | F1.4 medium index prism system   |
| Picture elements:        | 768 x 492 (effective, H x V)   |
| Sensing area:            | 6.4mm x 4.8 mm (equivalent to a 1/2-inch pickup tube)  |
| Built-in filters:        | 1: 3200K<br>2: 5600K + 1/16ND<br>3: 5600K  |
| Lens mount:              | Sony 1/2-inch Bayonet mount (with hot shoe)  |
| Signal system:           | NTSC color system  |
| Horizontal resolution:   | 700TV lines  |
| Minimum illumination:    | 4.0 lx with F1.4, + 18dB   |
| Sensitivity:             | F11.0 at 2000 lx (3200K, 89.9% reflectance) (typical)  |
| Gain selection:          | OFF (0dB)<br>MID (1dB to 17dB in 1dB steps)<br>HIGH (2dB to 18dB in 1dB steps)<br>(MID < HIGH)<br>0dB to 18dB variable (AGC) |
| Shutter speed selection: | OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000 sec   |
| Clear scan range:        | 59.9Hz to 200.3Hz  |
| Signal-to-noise ratio:   | 60dB (typical)   |
| Registration:            | 0.05% (all zones, without lens)  |
| Geometric distortion:    | Below measurable level   |
| Video output:            | Camera head BNC connector:<br>VBS: 1.0 Vp-p, sync negative   |
|                          | 26-pin connector   |
|                          | VBS: 1.0Vp-p, sync negative  |
|                          | Y/R-Y/B-Y: 1.0Vp-p, sync negative  |
|                          | Y: 1.0Vp-p, sync negative  |
|                          | R-Y/B-Y: 700mVp-p  |
|                          | Y/C:   |
|                          | Y: 1.0Vp-p, sync negative  |
|                          | C: 286mVp-p (burst level)  |

| VTR portion          |                                   |
|----------------------|-----------------------------------|
| <b>Video</b>         |                                   |
| Recording system:    | Rotary 4-head helical scan system |
| Y:                   | FM recording                      |
| R-Y/B-Y:             | FM recording (CTDM)               |
| Time code IN (BNC):  | 0.5V to 5Vp-p, 10kΩ               |
| Time code OUT (BNC): | 1.0Vp-p, 75Ω                      |

| Audio |       |   |
|-------|-------|---|
| Input | Mic:  | -60dBu, 3kΩ, balanced<br>(0dBu=0.775Vrms) |
|       | Line: | +4.0dBu, 10kΩ, balanced                   |

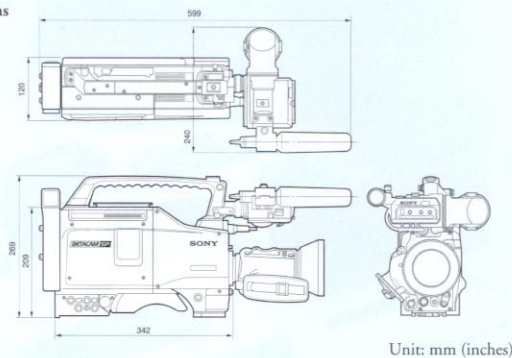
| Video performance                |  |
|----------------------------------|--|
| Bandwidth:                       | Y: 30Hz to 4.0MHz + 1.0/-4.0dB<br>R-Y/B-Y: 30Hz to 1.5MHz + 1.0/-4.0dB |
| S/N ratio:<br>(Component IN/OUT) | Y: More than 49dB<br>R-Y/B-Y: More than 47dB                           |
| Distortion:                      | K-factor: Less than 3%<br>Y/C delay: Less than 30ns                    |

| Audio performance   |   |
|---------------------|---|
| Frequency response: | 50Hz to 15kHz + 2.0/-5.0dB              |
| S/N ratio:          | More than 70dB( at 3% distortion level) |
| Distortion T.H.D.:  | Less than 1.5%(at 1kHz reference level) |
| Wow and flutter:    | Less than 0.18%rms                      |

| Connectors              |  |
|-------------------------|--|
| Playback Adaptor:       | 20-pin                                   |
| External VTR connector: | 26-pin                                   |
| Camera Video OUT:       | BNC x 2                                  |
| Camera Genlock IN:      | BNC x 1                                  |
| Camera MIC IN:          | XLR x 1 (3-pin) with 48V OUT             |
| Audio IN:               | XLR x 2 (3-pin) with 48V OUT selectable  |
| Headphone OUT:          | Stereo mini jack x 1                     |
| Remote:                 | Stereo mini jack x 1                     |
| Lens:                   | 12-pin (for 2/3-inch lens with LO-32BMT) |
| DC IN:                  | XLR 4-pin (for the optional CMA-8A)      |
| Time Code IN:           | BNC x 1                                  |
| Time Code OUT:          | BNC x 1                                  |

| Supplied accessories                           |  |
|--|--|
| Zoom lens VCL-714BX (UVW-100BF/100BK)          |  |
| Viewfinder DXF-601 (UVW-100BF/100BK/100BL)     |  |
| Carrying case LC-421 (UVW-100BF)               |  |
| Tripod adaptor VCT-U14 (UVW-100BF/100BK/100BL) |  |
| External microphone                            |  |
| Shoulder strap                                 |  |
| Lens cap                                       |  |
| Flange back chart                              |  |
| Operation manual                               |  |

### Dimensions



Design and specifications subject to change without notice.  
 Anton Bauer® products may not be available in some countries.  
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