

# HDC-1400R

Three 2/3-inch Power HAD HD CCD sensors  
dual format HD system camera with fibre  
interface



## Overview

### **Heralding a New Era of HD Production**

Pursuing the ultimate HD system for today and for tomorrow, Sony sets another milestone in the history of multi-format HD camera systems - the HDC-1400R - offering a broader choice of interlace and progressive formats, much greater picture quality, and enhanced operational flexibility.

The HDC-1400R incorporates a newly developed CCD imager and DSP LSI - two key devices that allow it to achieve ultimate picture performance in a variety of scanning modes. The CCD used in this camera can accommodate the popular interlace and progressive scan formats for mainstream broadcast productions including 1080/50i as well as the highest-quality 720/50P images.

The HDC-1400R camera provides digital transmission using SMPTE standard fibre optic cable to transmit high-quality digital data over long distances. The camera also provides two HD SDI outputs and one digitally down-converted SDI or analogue composite output. In addition, viewfinder signals with characters can be output from the SDI output connector, giving camera operators additional convenience.

The HDC-1400R, if required, can be operated in a triax environment utilising the HDTX-100/HDFX-100 triax adapter.

### **New CCD and DSP provides even greater picture performance**

The use of a new, state-of-the-art CCD sensor ensures high quality images even at low light level. The high sensitivity of F11 at 2000 lux, together with a signal to noise ratio of 56 dB combine to deliver unprecedented picture quality.

### **Dual-format operation - 1080 50i and 720 50P.**

The HDC-1400R can operate in a wide variety of capturing modes, including 1080 50i and 720/50p. Furthermore, the CCD can capture 1080 50P images, which can be down sampled to deliver the highest quality 720 50P pictures. In addition optional software allows the HDC-1400R to be upgraded with 1080/25P capability if necessary.

### **Ergonomic Design**

The design of the HDC-1400R is based on over two decades of Sony experience in manufacturing broadcast video cameras and camcorders, and provides a high level of operability. All control switches and connectors are in the most logical places and are positioned for optimum functionality and ease of use. The HDC-1400R's low centre of gravity design allows the operator to carry the camera comfortably on the shoulder. In addition, the shoulder pad of the HDC-1400R can be adjusted either forwards or backwards without using a screwdriver, so the camera can easily be moved to a well-balanced position.

## Features

**Sophisticated large lens adaptor design with one-touch, cable-free docking**

The HDLA-1500 large lens adaptor includes a unique mechanism which allows the HDC-1400R to be quickly and easily attached and detached without removing the large lens. No additional cable connections are necessary between the camera and adaptor, thanks to a novel "hot shoe" system.

**Flexible selectable transmission system both digital fibre optic or analogue triax transmission**

The HDC-1400R provides a fully digital transmission link to the base station. Using SMPTE standard hybrid fibre/copper cable, this allows completely transparent transmission of full bandwidth video and audio signals over cable length of up to 3000 metres. This ensures optimum quality HD signals can be delivered into any production environment. Moreover using the HDTX-100/HDFX-100 adaptor, the HDC-1400R can be used with a triax transmission system

**Power HAD FX CCD for high sensitivity**

The HDC-1400R is equipped with a newly developed three 2/3-inch type 2.2-megapixel HD CCD. Based on Sony HAD sensor technology and the latest on-chip lens structure, this new CCD offers a high sensitivity of F11 at 2000 lx. In addition to this performance, a wide variety of capturing modes including 1080/50i. What's more, this CCD can be operated in 1080/50i and 720/50P mode to cover all current mainstream HDTV formats.

**14-bit A/D (Analogue to Digital) conversion**

The HDC-1400R utilises a 14-bit A/D convertor, which enables images captured by the high-performance CCDs to be processed with maximum precision. In particular, this high-resolution A/D conversion allows the gradation in mid-to-dark-tone areas of the picture to be faithfully reproduced. Thanks to this 14-bit A/D convertor, pre-knee signal compression at highlight areas can be eliminated and the camera can clearly reproduce a high-luminance subject at a 600% dynamic range.

**Improved S/N ratio**

At the heart of the outstanding picture performance of the HDC-1400R camera is a newly developed 2/3-inch type 2.2-megapixel full HD progressive CCD. Based on Sony's HAD sensor technology and the latest on-chip lens structure, this CCD offers a high sensitivity of F10 or F11 at 2,000 lx and an excellent signal-to-noise ratio of 56 dB (typical).

Together with a unique "Noise Suppression" function, which reduces the high-frequency noise elements in video signals by using Sony's advanced digital signal processing technology, a 64dB S/N ratio can be achieved.

**Newly added Focus Assist Functions**

For easier focusing through the viewfinder, two types of focus assist functions are newly incorporated to the HDC-1400R: Viewfinder Detail and Focus Assist Indicator. To intuitively recognize a focusing point, users of the camera can add dedicated image-enhancing edge signals directly to the viewfinder as "Viewfinder Detail". The "Focus Assist Indicator" is a helpful tool for manual focus adjustments, especially when shooting wide-angle views. An indicator is displayed at the bottom or other positions of the viewfinder frame, enabling users to make more accurate and fine focus adjustments.

**Compact and Lightweight**

The HDC-1400R portable camera is designed to be very compact and lightweight for a

high level of mobility in the field. The HDC-1400R camera weighs approximately 4.5 kg ensuring comfortable operation either on the shoulder or on a tripod.

Specifications

| General                             |  |
|-------------------------------------|--|
| Power requirements                  | 240 V AC, 1.4 A (max.), 180 V DC, 1.0 A (max.), 12 V DC, 7 A (max.)                      |
| Operating temperature               | -20 to +45°C (-4 to +113°F)  |
| Storage temperature                 | -20°C to +60°C (-4°F to +140°F)  |
| Mass                                | Approx. 4.5 kg (9 lb 15 oz)  |
| Camera                              |  |
| Built-in filters                    | ND:, 1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND, 5: CROSS                                  |
| Sensitivity (1080/59.94i)           | F10 at 2000 lx (3200K, 89.9% reflectance)  |
| Signal-to-noise ratio (1080/59.94i) | 54 dB (typical)  |
| Horizontal resolution (1080/59.94i) | 1000 TV lines (at center)  |
| Registration                        | Within 0.02% (all zones, without lens)   |
| Shutter speed selection             | 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000 s (1080/59.94i)                               |
| Modulation depth                    | 45% horizontally (typical) (800 TV lines at center, 27.5 MHz, with typical lens)         |
| Pickup device                       | 3-chip 2/3-inch type CCD   |
| Effective picture elements (H x V)  | 1920 x 1080  |
| Signal format                       | 1080/59.94i, 720/59.94P (for 60-Hz countries)<br>1080/50i, 720/50P (for 50-Hz countries) |
| Spectrum system                     | F1.4 prism system  |
| Lens mount                          | Sony bayonet mount   |
| Input/output connectors             |  |
| Audio input (CH1)                   | XLR-3-pin (female) (1), mic or front mic or line selectable                              |
| Audio input (CH2)                   | XLR-3-pin (female) (1), AES/EBU or mic or line selectable                                |
| Mic 1 input                         | XLR-3-pin (female) (1)   |
| DC input                            | XLR-4-pin (1), 10.5 to 17 V DC   |

|                 |  |
|-----------------|--|
| DC output       | 4-pin (1), 10.5 to 17.5 V DC, 1.5 A (max.) |
| Test output     | BNC type (1), 1.0 Vp-p, 75 ohms            |
| SDI output      | BNC type (1) HD-SDI/SD-SDI selectable      |
| Earphone output | Stereo minijack (1)                        |
| CCU             | Electro-optical connector (1)              |
| Tracker         | 10-pin (1)                                 |
| Crane           | 12-pin                                     |
| Intercom 1      | XLR-5-pin (female) (1)                     |
| Intercom 2      | XLR-5-pin (female) (1)                     |
| Remote          | 8-pin (1)                                  |
| Lens            | 12-pin (1)                                 |
| Viewfinder      | 20-pin (1)                                 |

Supplied Accessories

|                   |
|-------------------|
| Switch label 1, 2 |
| Operation manual  |



## Gallery

