RU-1000VR Remote Control Unit

**Dimensions**
- L x W x H: 116 x 182 x 60 mm

**Mass**
- 0.6 Kg / 1.2 lbs.

**Power input**
- +12VDC

**Operational temperature**
- 0°C to 40°C, 32°F to 104°F

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**CAUTION**
To ensure safe operation, please read the instruction manual before using this product.

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**Hitachi Kokusai Electric**

Introducing the newest member of the prestigious Z-camera family of economical HDTV cameras.
Hitachi Z-HD5000 Multi-application HDTV Studio and Field Production Camera

Hitachi’s advanced digital signal processing

Each essential part of the Hitachi Z-HD5000 camera system has its own DSP processor. Different DSP ICs are used independently for different parts of the system configuration and with the type of optical fiber cable. The maximum HFOC length with applied camera power and fully operational facilities is 3,000 meters (9,840 feet). Unique to cameras in the Z-HD5000’s price range are optical power meters at the camera head (via engineering menu) and on the front panel of the CU-HD500 camera control unit. These meters indicate the optical condition of both the receive and transmit signals in excess of 58dB to be faithfully reproduced. Additional digital output signals are available for the camera head.

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Digital signal transmission via Hybrid Fiber Optical Cable

The Z-HD5000 camera system utilizes industry standard Hybrid Fiber-optic cable connectors made of high-strength stainless steel to ensure durability and reliable performance under the most demanding TV Studio and Field production circumstances. All command audio and video signals to and from the camera are digitally transmitted hence, totally immune to EMI/RFI interference. Camera power and cable condition supervision are also performed when using the Hybrid Fiber-Optic Cable (HFOC). Full Auxiliaries (up to 4 analog or digital, HD or SD) video return and individual Teleprompter facilities can be connected and used in combination with the camera system configuration and with the type of optical fiber cable.

The Z-HD5000 camera head processing, the transmission system and the Camera Control Unit (CCU) processing. The new, power-efficient Digital Signal Processor LSI’s are designed under the 65nm rule with dynamic processing capability in excess of 30-bits per pixel, per RGB channel. Hitachi’s DSP processors are designed for and, can adopt to progressive readout HDTV sensors. The processing dynamic headroom of the Z-HD5000 in theory (16-bit), allow for signals in excess of 58dB to be faithfully reproduced. Additional digital encoding at the camera head and CCU provides low interference and high signal integrity for both digital and analog outputs. An outstanding overall signal-to-noise ratio specification of 58dB is achieved by use of our low-noise circuit technology. The standard sensitivity is rated at F10 with 2000 lx. Even at high gain, clear images are obtained with little noise.

CU-HD1000 Camera Control Unit

SU-1000 Setup Control Unit

Power supply voltage

CU-HD500U  AC117V @ 60Hz
CU-HD500E  AC230V @ 50Hz
CU-HD500U  AC117V @ 60Hz
CU-HD500E  AC230V @ 50Hz

Power consumption

62W approx. (AC operation, including Z-HD5000, VF-402 and AUX POWER OUT 100VA)

CU-HD500 Camera Control Unit

Power supply voltage

SU-1000 Setup Control Unit

300W approx. (AC operation, including Z-HD5000, VF-402 and AUX POWER OUT 100VA)

Power consumption

62W approx. (AC operation, including Z-HD5000, VF-402 and AUX POWER OUT 100VA)

CU-HD500 Camera Control Unit

Power supply voltage

CU-HD1000U  AC117V @ 60Hz
CU-HD1000J  AC100V @ 50/60Hz
CU-HD1000S  AC230V @ 50Hz

Power consumption

9kg, 19.6lbs.

CU-HD1000U  AC117V @ 60Hz
CU-HD1000J  AC100V @ 50/60Hz
CU-HD1000S  AC230V @ 50Hz

Power consumption

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Z-HD5000 Camera System

Superb High Definition picture reproduction & enhancement tools

Real-time Lens Aberration Correction (RLAC)
Modern HDTV lenses can still produce certain optical distortions. One of these called "lateral chromatic aberration" can be reduced in certain model of lenses when used with the Z-HD5000 camera system. The Hitachi function is called RLAC meaning "Real-time-lens-aberration-correction" and it dynamically corrects the image using the correction data provided by the digital interface between the lens and camera.

Chroma Saturation
Total chroma saturation allows control over the amount of color in the image. A purely black & white image can be also achieved.

Picture sharpness enhancement
Skin-tone Detail
Skin-tone Detail functions allow a flesh color-based softening of the image to achieve the impression of more youthful TV personalities. 2 individual memories exist as well as a function to automatically detect the hue, saturation and luminance of the skin-tone to be affected. This function is not limited to skin-tones only; it can increase or decrease the sharpness of any pair of colors in the image.

High-chroma detail
The High-chroma detail adjustments allow precise control of the detail level in highly color-saturated portions of the picture such as the petals of a rose or a colorful fabric.

Color reproduction excellence
Triple-masking
The triple-masking function includes 2-panel, linear matrix and Skin tone masking providing users wide latitude in subject image color control. The 2-panel matrix corrector provides independent control of hue and saturation for six primary and secondary combinations of colors. A 6-axis linear matrix provides overall color correction for excellent, precise color rendition control. The Skin tone masking function provides "fine painting" (hue and saturation) of skin tones without affecting other colors in the scene.

Other Useful Production Camera Features
Prompter and floor monitor power
Enough AC Power available to drive 2x 24inch LCD monitors with either Hybrid Fiber Cable or Digital Triax CCUs.

Focus Assist
Focus Assist supports the camera operator in finding the right focus in the viewfinder. The Area Marker detects edges inside area, while a focus indicator shows the actual detail level by a horizontal line.

Gray-Scale automatic setup
The Z-HD5000 offers the Gray-Scale Automatic Setup function to optimize the optical parameters that could negatively affect the image you are trying to capture and faithfully reproduce. The Gain, Gamma, and flare are the video signal functions that vary from lens to lens.
Flexible Choice of Camera Control Units

Two models of Camera Control Units are offered for the Z-HD5000 camera system. The CU-HD1000 and the CU-HD500 CCUs both serve applications for Studio and Field production.

The CU-HD1000 offers the ability of 50/60Hz line power switching, it is compliant with RoHS/ WEEE directives* and as a standard function, the ability to output 1080i (50/59.94) or 720p (50/59.94) (CU-HD1000). Its reduced size (half-rack width/ 3RU’s high), weight (7Kg approx.) and improved power consumption make it ideal for OB applications**. It also includes a unique optical power meter that indicates the status of the HFOC.

Both CCUs are of easy-to-maintain modular design: employ the same control panels, data cables and peripherals. Other common CCU features include:

- Dual HD TV format outputs. Switcheable between 1080i (50/59.94) and 720p (50/59.94). (CU-HD1000)
- Simultaneous HD-SDI / SD-SDI digital outputs.
- VBS, Analog RGB or Y, B-Y, R-Y component outputs.(CU-HD1000)
- 4 auxiliary returns (CU-HD1000) / 2 auxiliary returns (CU-HD500)
- Dedicated teleprompter channel.
- APIB type color bar output.
- 2-channel balanced analog Mic audio outputs or embedded .SDI digital audio.
- Genlock with composite or tri-level sync.
- 2-channel, 2W/4W intercom system.
- RS-232C remote control.
- Selectable Hybrid fiber or Single mode fiber (CU-HD500) Single mode fiber up to 6km

*RoHS stands for the “restriction on the use of certain hazardous substances in electrical and electronic equipment”. It is an European Directive aiming to control the use of certain hazardous substances in the production of new electrical and Electronic equipment (EEE).

** (See detailed specifications on the last page of this brochure)

Remote Control Unit

- The RU-1000VR is a compact remote operation panel designed for easy operation of standard camera functions. Iris and master black adjustments employ "VRtype" rotary knobs controls and commonly used controls and functions are directly and instantaneously accessible to the video control engineer.

- The RU-1500JY is a high performance touchscreen remote operation panel designed for ease of use. Easily adjustable using the 3.5" LCD touchscreen panel and rotary encoders, plus custom switches to further support the professional user in designing a personal workflow. The RU-1500JY provides an integrated SD card slot for transferring user setup and Scene File information, and Ethernet connectivity for control over an IP network.

Studio and Field Production Viewfinders

The Z-HD5000 camera system offers three choices for Studio or Field production viewfinders. Model VF-L90HD is a color 9-inch TFT-LCD screen and Model HFD-700H is a color 7-inch TFT-LCD screen which are designed for critical color viewing of the image. TFT-LCD screens are most suitable where precise composition and color evaluation of the image are required.

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