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

These Specifications are subject to change without notice.
Hitachi Z-HD6000
HDTV Studio Production Camera

2.6 million pixel 3CMOS sensor HDTV production camera
The Z-HD6000 is a high-performance HDTV portable production camera. Hitachi has implemented the latest imaging technology by using newly developed 2.6 million pixel 3CMOS sensors to create outstanding HD images for new achievements in high sensitivity and no vertical smear.

Hitachi’s advanced digital signal processing
Each essential part of the Hitachi Z-HD6000 camera system has its own DSP processor. Unique, independent DSP IC’s are used for camera head processing, the transmission system and Camera Control Unit (CCU) processing. Hitachi’s new, power-efficient digital signal processors are designed to work with future 2K imaging technologies, offering excellent return on investment. The Z-HD6000 achieves an outstanding signal-to-noise ratio specification of 60dB using Hitachi’s proprietary low-noise circuit technology. Standard sensitivity is rated at F12 (5.944ft/F13 (5.034ft)) at 2000 lux. Clear images are obtained with little noise, even at high gain.

Dockable design
2-Piece Chassis Design
Hitachi’s 2-piece chassis allows the use of Digital Fiber, Digital Triax and Wireless camera adapters to offer the greatest flexibility of any camera in this price class.

Streamlined Chassis
The Z-HD6000 is a fully integrated, 2-piece design with no dogs or external adapters making it a fully functional HDTV production camera.

Digital signal transmission via Hybrid Fiber Optical Cable
The Z-HD6000 camera system utilizes industry standard Hybrid Fiber-optic cable (HFOC) connectors made of high-strength materials that insure durability and reliable performance under the most demanding TV production conditions. The maximum HFOC length with applied camera power and fully operational facilities is 4,000m (13,200 feet) with no utility power. It provides 10X the distance of Multicore cable. Optical power meters at the camera head (via engineering menu) and CCU front panel indicate the optical condition of both transmitting and receiving signals independently to accurately depict proximity to the “digital cliff” (maximum cable distance) or provide basic HFOC diagnostics.

*LFOC distance with applied CCU power differs depending on system configuration. It is dependent on type of lens used, viewfinder, studio adapter, teleprompter and other accessories that may be connected thereby consuming power otherwise available for the camera head.

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High-resolution horizontal performance of 1100TVL (Luminance gain. at 2000 lx. Clear images are obtained with little noise, even at high gain.

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Color reproduction excellence
Triple-masking
The triple-masking function includes 12-vector, linear matrix and Skin tone masking providing users wide latitude in subject image personalities. Two individual memories exist as well as a function to automatically detect the hue, saturation and luminance of the Skin tone to be affected. Furthermore, the Skin tone Detail level can be adjusted to follow the lens’ zoom to avoid ‘rubber faces’ in wide angle shots while using the function.

Other Useful Production Camera Features
Prompter and Floor Monitor Power
The Z-HD6000 provides enough AC power to drive both a teleprompter and monitor through a Hybrid Fiber or Digital Triax CCU.

Floor Monitor Digital Video
The studio ON-AH or Floor Monitor can be connected by SDI (digital) video directly from the camera head offering high quality critical viewing.

Professional Audio Intercom Connectors
Hitachi uses dependable XLR-professional type audio connectors for the 2 intercom and 2 MIC/LINE audio facilities.

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

Gray-Scale Automatic Setup
Z-HD6000 offers a Gray-Scale Auto-Setup function which automatically adjusts video parameters that can negatively affect images you are trying to capture and faithfully reproduce. Gain, Gain, and Flare are corrected using a common 11-step gray scale chart and stored in memory.

Superb High Definition picture reproduction & enhancement tools
Real-time Lens Aberration Correction (RLAC)
Modern HDTV lenses can still produce optical distortions. One of these called “Lateral chromatic aberration” can be reduced in certain lens models when used with the Z-HD6000 camera system. The Hitachi function is called RLAC (Real-time Lens Aberration Correction) and it dynamically corrects images using correction data provided by the lens, through a digital interface with the camera.

Luminance response tools
Black Stretch
The Z-HD6000’s Black stretch function allows for better reproduction of dark or underexposed areas by evenly raising the luminance response without changing the pedestal or white clip/ knee settings. It is especially useful in high contrast image venues.

Ultra-Gamma
A new and useful function implemented in the Z-HD6000 is Ultra-Gamma, which provides seven different responses to dramatically increase exposure latitude of the camera in shooting conditions where lighting and scenery vary widely in intensity.

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Flexible Choice of Camera Control Units

**Optical Fiber System**
The Z-HD6000 camera system can employ 2 different model control units to suit your budget for Studio and Field production. The CU-HD1000-S8 and CU-HD500 optical fiber CCUs (camera control units) can be used worldwide due to their 50/60Hz switchable universal power supplies. They furthermore comply with RoHS/WEEE directives.

The CU-HD1000-S8 additionally has the ability to output 1080i (50/59.94) or 720p (50/59.94) and is a half-rack size 3RU’s high, weighing 8.5kg (approx.). The CU-HD500 is 88mm high and, of 2-RU EIA 19-inch rack width, weighing 8kg (approx.). Both CCUs employ the same control panels, data cables, accessories and peripherals.

“RoHS” is an abbreviation “Restriction of Hazardous Substances” in electrical and electronic equipment”. It is a European Directive aiming to restrict the use of certain hazardous substances in the production commonly used in electrical and electronic equipment (EEE).

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**CU-HD1000-S8**
Unique Optical Power Meter

**CU-HD500**

**Digital Triax System**
Hitachi’s Digital Triaxial cable transmission system addresses two application requirements from our customers worldwide.

1. It is the next best, completely digital, signal transport after fiber-optic cable. No other HDTV triaxial cable transmission system comes close.
2. In applications where traditional triax is already in use, substantial savings in cabling infrastructure costs can be realized.

Hitachi’s patented Digital Triax System consists of the camera head triax adaptor and the corresponding TU-HD1000 camera control unit. The main advantages and characteristics are:

- Hitachi’s patented, fully digital, bi-directional signal transmission system.
- Completely Digital - Employs no RF modulation or modems.
- Little to no signal degradation.
- Capabilities on reduced costs and maintainability of triaxial cable & connectors.
- CCU includes 1080i (50/59.94) / 720p (50/59.94) cross-converter for SD/HD-SDI outputs.
- Can also operate on simple Coax cable with local head power.
- Fast frame rate switching.
- Built in, high-performance SDTV up/down converters.
- Similar to’s as the CU-HD1000.

**CU-HD1000-S8 Rear Panel**

**CU-HD500 Rear Panel**

**CX-HD1000 Triax adaptor**

**TU-HD1000 Triax base station**

**Remote Control Unit**
- The RU-1000VR is a compact remote operation panel designed for easy operation of standard camera functions. Its and master black adjustments employ “VR-type” rotary knobs controls and commonly used controls and functions are directly and instantaneously accessible to the video control engineer.
- The RU-1500UV 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-1500UV provides an integrated SD card slot for transferring user setup and Scene File information, and Ethernet connectivity for control over an IP network.

**CU-HD1000-S8**

**CU-HD500**

**System configuration chart**

**Field and Studio Production Viewfinders**
The Z-HD6000 camera system offers three choices for Studio or Field production viewfinders. Model VF-L90HD is a color 9-inch TFT-LCD screen and Model HDF-700H is a color 7-inch TFT-LCD screen which are designed for critical color viewing of the image. The LCD screen offers a wide viewing angle and fast response time for a lag free, crisp image. TFT-LCD screens are most suitable where precise composition and color evaluation of the image are required. The VF-HD500 model is a monochrome 5-inch CRT-type unit that is more suited for Sports and OB applications where high-brightness and contrast are required. Both our Studio and Field production viewfinders can be outfitted with alternate mounts thereby decreasing the overall system cost.

- VF-L90HD Viewfinder /AT-951
- HDP-700H Viewfinder /AT-750
- VF-HD500 Viewfinder /AT-550

**Field Viewfinders**
- Model VF-L90HD is a color 9-inch TFT-LCD screen with ARIB-type color bar output.
- Model HDF-700H is a color 7-inch TFT-LCD screen.
- Model VF-HD500 is a monochrome 5-inch CRT-type unit.

**Studio Viewfinders**
- Model VF-402 is a color 7-inch LCD screen and Model HDF-700H is a color 7-inch TFT-LCD screen which are designed for critical color viewing of the image. The LCD screen offers a wide viewing angle and fast response time for a lag free, crisp image.

**TFT-LCD screens** are most suitable where precise composition and color evaluation of the image are required. The VF-HD500 model is a monochrome 5-inch CRT-type unit that is more suited for Sports and OB applications where high-brightness and contrast are required. Both our Studio and Field production viewfinders can be outfitted with alternate mounts thereby decreasing the overall system cost.

**System configuration chart**

**CX-HD1000 Triax adaptor**

**TU-HD1000 Triax base station**

**Remote control units**
- RU-1000SV
- RU-1500UV

**Microphone holder**

**2-inch viewfinder**

**Portable Zoom Lens**

**Camera head**

**Viewfinder adapter**

**Fiber cable**

**Remote control unit**

**Switch or Hub**

**RJ45**
<table>
<thead>
<tr>
<th>SPECIFICATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Camera Head Z-HD6000 / Z-HD6000E</strong></td>
</tr>
<tr>
<td><strong>Model Type</strong></td>
</tr>
<tr>
<td><strong>Image Device</strong></td>
</tr>
<tr>
<td><strong>Total pixels</strong></td>
</tr>
<tr>
<td><strong>Effective pixels</strong></td>
</tr>
<tr>
<td><strong>System</strong></td>
</tr>
<tr>
<td><strong>Constructions</strong></td>
</tr>
<tr>
<td><strong>Lens mount</strong></td>
</tr>
</tbody>
</table>
| **Registration** | Low-
| **Shutter speed** | Normal 1/60, 1/250, 1/500, 1/1000 s, 1/2000 s, 1/2500 s, 1/5000 s, 1/10000 s |
| **Film emulsion** | 3200K, 4300K, 5600K, 6300K, 8000K |
| **Electrical Filters** | Clear, Cross, 1/16ND, 1/32ND, 1/64ND, 1/128ND, 1/256ND |
| **Signal to Noise Ratio** | 1100TVL |
| **Sensitivity** | 0.01 % (excluding lens characteristics) |
| **Input Signals** | 1x BNC HD-SDI VF out (Character ON/OFF) |
| **Video Inputs & Outputs** | 2-channel, 4-input remote AUX/VF video select connector with phantom power on/off |
| **Other I/O** | 1x 4-pin XLR, 12VDC, power input (for use in cranes or extended Head/VF configurations) |
| **Power consumption** | 2-inch Viewfinder: Approx. 15W (AC operation, including SK-HD1000, 210W approx.) |
| **Mass** | 2.2kg, 4.8lbs. Camera head |
| **Dimensions** | 252(W) x 185(H) x 86(D) |
| **Camera Control Unit CU-HD1000-S8 (59.94Hz) / CU-HD1000E-S8 (50Hz)** |
| **Model Name** | Z-HD6000 / Z-HD6000E |
| **Input & Output** | 2x HD-SDI out ( 1x HD/SD-SDI Cam/Ret, SD-SDI PPT switchable ) |
| **Internal tally** | 1x D-sub 15-pin WFM 0-7, 0/5V, Contact or Voltage selectable |
| **Internal tally** | 1x XLR, 3-pin, 0dBm/ 600Ω |
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| **Input & Output** | 2x HD-SDI out ( 1x HD/SD-SDI Cam/Ret, SD-SDI PPT switchable ) |
| **Internal tally** | 1x D-sub 15-pin WFM 0-7, 0/5V, Contact or Voltage selectable |
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**2-inch Viewfinder VF-402 (59.94Hz) / VF-402E (50Hz)**

- **Dimensions**: 230(W) x 185(H) x 86(D)
- **Mass**: 2.1kg, 4.6lbs. Camera head
- **Power consumption**: Approx. 15W (AC operation, including SK-HD1000, 210W approx.)
- **Video Inputs & Outputs**: 2x HD-SDI out, 1x SD analog teleprompter out shared
- **Other I/O**: 1x 4-pin XLR, 12VDC, power input (for use in cranes or extended Head/VF configurations)

**B&W CRT Viewfinder VF-HD500 (59.94Hz) / VF-HD500E (50Hz)**

- **Dimensions**: 150(W) x 45(H) x 140(D)
- **Mass**: 2.6kg, 5.7lbs
- **Power consumption**: Approx. 15W (AC operation, including SK-HD1000, 210W approx.)
- **Video Inputs & Outputs**: 1x D-sub 15-pin WFM 0-7, 0/5V, Contact or Voltage selectable
- **Other I/O**: 1x XLR, 3-pin, 0dBm/ 600Ω

**9-inch Viewfinder LFH90D**

- **Constructions**: 59.94Hz: 300W approx., 50Hz: 252W approx.
- **Mass**: 9kg, 19.8lbs
- **Power consumption**: Approx. 15W (AC operation, including SK-HD1000, 210W approx.)
- **Video Inputs & Outputs**: 1x D-sub 15-pin WFM 0-7, 0/5V, Contact or Voltage selectable
- **Other I/O**: 1x XLR, 3-pin, 0dBm/ 600Ω

**7-inch Viewfinder H7D004**

- **Picture Resolution**: 480 (H) x 480 (V)
- **Color Transmission**: 1500:1, 60Hz field frequency 59.94Hz/50Hz, Number of scanning lines 2270
- **Color Temperature**: 9300K
- **Power consumption**: Approx. 15W (AC operation, including SK-HD1000, 210W approx.)
- **Video Inputs & Outputs**: 1x D-sub 15-pin WFM 0-7, 0/5V, Contact or Voltage selectable
- **Other I/O**: 1x XLR, 3-pin, 0dBm/ 600Ω

**7-inch Viewfinder LFH700**

- **Picture Resolution**: 480 (H) x 480 (V)
- **Color Transmission**: 1500:1, 60Hz field frequency 59.94Hz/50Hz, Number of scanning lines 2270
- **Color Temperature**: 9300K
- **Power consumption**: Approx. 15W (AC operation, including SK-HD1000, 210W approx.)
- **Video Inputs & Outputs**: 1x D-sub 15-pin WFM 0-7, 0/5V, Contact or Voltage selectable
- **Other I/O**: 1x XLR, 3-pin, 0dBm/ 600Ω

**Fiber Camera Adapter CA-HF1000 / CA-HF1000E**

- **Connectors**: 1x IP40 Female connector (L2988-Tap) Type
- **Video transmission system**: SMPTE-261A Type
- **Resolution**: 2x channel, 2160 pixels (16:9), volume
- **Program audio**: HDMI, HD-SDI, 0dBm/600Ω
- **Electronic Shutter**: 1/2000, AES
- **Gain selection**: M (medium) 0, +3, +6, +9, +12, +15, +18, +21dB
- **Lens mount**: 1x BNC HD-SDI VF out (Character ON/OFF)
- **Return/ Aux switcher**: 1x 4-pin XLR, 12VDC, power input (for use in cranes or extended Head/VF configurations)
- **Power consumption**: Approx. 15W (AC operation, including SK-HD1000, 210W approx.)

**Dimensions**

- **LH100D LCD Color Studio Viewfinder**: 650(W) x 350(H) x 180(D)
- **LH700D LCD Color Studio Viewfinder**: 400(W) x 350(H) x 180(D)
- **LH700D B&W CRT Studio Viewfinder**: 400(W) x 350(H) x 180(D)