

HC-400/HC-400W Professional Digital Video Camera


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Professional Camera Operators Now Have the Camera to Create Superb Images

New Digital Design to produce high quality video, we have adopted new digital processing ASICs, used in broadcast cameras. The use of a six-axis linear matrix system enables fine tuning of color. The HC-400/400W provides a natural look and stability not possible by analog cameras of the past. System (pdf: 331KB)

User's quotes;

- "The HD Group" (NY)

Picture Quality

Double Lineup

The HC-400 features a fixed 4: 3 aspect ratio, using newly developed high-sensitivity 2/3 " IT CCDs, each with approx. 410,000(NTSC) or 470,000(PAL) pixels. The HC-400W is equipped with the latest 16 : 9 IT sensors to switch camera aspect ratios (16:9/4:3). This version employs 2/3 " IT CCDs with 520,000 pixels(NTSC) or 600,000 pixels(PAL).

Low Smear and High Sensitivity CCD

The high quality CCD was selected under the harshest guidelines for image quality, with a low smear level of 120dB. It has adynamic range of 600%. With a minimum illumination of 0.5 lx and a sensitivity of f11(Specifications that rival broadcast - quality cameras).

High Resolution

The HC-400/400W achieve a natural picture quality with high horizontal resolution of 800(HC-400),750(HC-400W) TV lines. Vertical resolution can be upgraded by 20% to 480(NTSC),570(PAL) TV lines with the Super-V function, achieving better balance between vertical and horizontal resolution.

DTL

In the HC-400/400W, three special types of DTL Detail enhancement are provided.

Skin DTL

The skin DTL function is used when skin quality is being emphasized. The edge sharpness in the skin color can be softened, providing a more youthful appearance of the talent. This is Emmy-award winning broadcast-camera feature is built into the HC-400/400W.

Soft DTL

Soft DTL function ensures against excessively sharp edges between areas of great contrast. DTL on parts with greater differences in gradation is reduced to obtain images that are more natural.

Diagonal DTL

Diagonal DTL function increases sharpness in the diagonal direction. It extracts diagonal parts of image signals to generate edge signals. In addition to increasing the resolution of the picture, the function also helps reduce cross color moire.

DTL Setting

A function for DTL boost frequency variation, which can select eight levels for the central frequency of edge signals (2.8MHz to 7.0MHz), and a function for B/W balance, where the central DTL brightness can be set, are incorporated in the HC-400/400W. These functions enable DTL to be used more effectively in the field.

Black Stretch

The black stretch function meets the needs of professional cameramen who want to avoid excessive dark areas in high contrast scenes. With three settings (3, 5, and 7%), this function enables improvement in dark areas of pictures by lifting the image level of only areas of low brightness.

36dB Gain Up

Gain is often used in dark environments is improved. Gain can be set to a maximum of 36dB. Also, because any gain level can be assigned to the MID and HIGH switches, cameramen can maintain optimum video under varying lighting conditions merely by flicking a switch.

Preset and Variable Shutters

The preset shutter has five speeds (1/100, 1/120, 1/250, 1/500, 1/1,000, 1/2,000 seconds) and speeds of between 1/60.3 and 1/201 (NTSC), 1/50.3 and 1/200 (PAL) seconds can be set on the variable shutter.

Backlight Compensation

A backlight compensation switch is used with automatic iris. By opening the lens iris by approximately one stop, this function enables fast shooting in scenes with great contrast.

Electric Color Temperature Compensation Circuit

An electric color temperature compensation circuit, which automatically compensates for daylight color temperature, is included. The AWB can be set without worrying about filter selections.

Operation

Integrated VCR Operation

Balanced design of the HC-400/400W enables use with the most widely used VCRs. A low-profile VCR adaptor is placed on the rear panel to enable integrated VCR operation. Most notable, DVCPRO50/25 VCR (IR-D90) has been added to the line.

Setup

Via a viewfinder character menu system, it is possible to adjust the full complement of camera setup parameters. The design, which includes a bit switch on the MPU module in the camera for safety, enables professional users to create their own setups.

Initialize Function

Professionals who care about their picture creation, are delighted to find that the number of items they can set has been increased. However, the more the items that can be set, the more likely mistakes are made. This is where the initialize function can be depended upon. Selection of "initialize" in the menu enables users to easily return to the initial settings (as shipped). This is a useful function if the HC-400/400W will be used by a number of cameramen or when the camera needs to be reset.

1.5 inch VF

The camera includes a 1.5-inch VF that ensures crisp, stable images using a high resolution CRT. A quick-start tube and other features ensures easy operation. In particular, a lens light

supports manual iris operation in dimly lit environments. Two types of zebra signals can be selected depending on the image, allowing content based on overall picture brightness or content based on flesh tone brightness of the talent's face.

Substantial Character Display

All conditions under which the cameraman is operating can be displayed on the VF and easily set using a menu format.

Memory Function

In addition to 3,200K preset automatic white balance settings, the HC-400/400W comes with two sets of memory, A and B. With four channels of scene files, users can quickly change settings.

Memory Card Function

(HC-400W) Camera setup can be recorded onto a memory card (SmartMedia) for recall at later time or transfer to another camera.

Lens File

Professional cameramen are very much concerned about differences in the optical characteristics of lenses. Eight lens files can be preset to reduce the amount of time required for adjustment when lenses are changed.

Filters

The camera comes with four built-in optical filters. The 5600K filter includes both a 1/16 ND and 1/64 ND. This enables standard filters to be used even in the middle of the day when light contrast is the highest.

Batteries

Battery life is a major concern when shooting outdoors. The HC-400/400W comes with a voltage alarm function where a voltage indicator flashes when the battery voltage drops below a set value.

Shoulder Pad

The shoulder pad on the HC-400/400W has a flexible design that allows for front and back adjustment. The incline of the shoulder pad can be also adjusted.

GEN LOCK

A GEN LOCK connector is provided on the camera head for system integration. This is useful when using a dockable VCR, and genlock is required.

Catering for Studio Production

The DC IN connector for the CA-400 camera adapter and the VCR connector are angled 45° to ensure that the associated cables will not interfere with operation of the camera on a tripod. To support use in the studio, there is a 5-inch VF, and camera control unit. A remote control unit is also available.

Camera Accessories



VF5045W 5-inch Viewfinder



VF15-46 1.5-inch Viewfinder



Studio Conversion Kit



MA-400 Camera Control Unit



MA-200A Camera Control Unit



RCU-240A Remote Control Unit



ACP-735 AC Power Supply



MT-667D-01 Head Set

Specification

Optical System	RGB Prism type f1.4	
Image Sensor	2/3" 3 IT CCDs	
Effective Number of Pixels	HC-400 NTSC: HC-400 PAL: HC-400W NTSC: HC-400W PAL:	Approx. 380,000 pixels (H768 X V494) Approx. 440,000 pixels (H752 x V582) Approx. 460,000 pixels (H948 x V485) Approx. 540,000 pixels (H936 x V575)
Total Number of Pixels	HC-400 NTSC: HC-400 PAL: HC-400W NTSC: HC-400W PAL:	Approx. 410,000 pixels (H811 x V508) Approx. 470,000 pixels (H795 x V596) Approx. 520,000 pixels (H1020 x V505) Approx. 600,000 pixels (H1008 x V591)
Scanning System	NTSC : 2:1 interlaced, 525 lines, 60 fields, 30 frames/sec PAL: 2:1 interlaced, 625 lines, 50 fields, 25 frames/sec	
Sync System	Internal/External sync (genlock)	
Input Signal	External sync signal: (genlock) RET. video signal: Microphone inut:	VBS 1.0Vp-p- 75 ohms or BBS 0.45Vp-p, 75ohms 1 channel VBS 1.0Vp-p 75ohms (26pin connector) 1 channel -60dB balance high impedance (XLR type, 3pin connector) 1 channel
	Compossite signal:	1.0Vp-p 75 ohms 2 channels (BNC connector, 26pin connector)

Output Signal	Y/C signal: Component signal: RGB signal: Audio signal:	Y: 1.0Vp-p 75ohms C: 0.286Vp-p 75 ohms (Y/C connector, 26pin connector) 2ch Y: 1.0Vp-p 75 ohms Pb/Pr: 0.700Vp-p (NTSC) 75 ohms Pb/Pr: 0.525Vp-p (PAL) 75 ohms (26pin connector) 1 channel V 0.7Vp-p 75 ohms 1 channel (26pin connector) -20dBm/-60dBm 600 ohms balance (26 pin connector) 1 channel
Lens Mount	2/3" B4 bayonet	
Optical Filter	3200K, 5600K + 1/16ND, 5600K, 5600K + 1/64ND	
Gain Selection	-3.0, +6, +9, +18, +30, +36dB	
Shutter	1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000 NTSC: Variable in 1/60.3 - 1/201 PAL: Variable in 1/50.3 - 1/200	
Auto Function	Auto White Balance, Auto Black Balance, Auto Iris, Auto Shading, Auto Knee	
Horizontal Resolution	HC-400: 800TV Lines or more HC-400W: 750TV Lines or more(16:9/4:3)	
Vertical Resolution	NTSC: 400TV Lines/480TV Lines(SuperV) PAL: 450TV Lines/570TV Lines(SuperV)	
S/No.	NTSC: 63dB PAL: 61dB	
Sensitivity	Standard: f11.0 at 2000 lx(3200K) Minimum: f1.4 at 0.5 lx (with +36dB gain)	
Registration	Entire screen : within 0.05%	
Aspect Ratio	HC-400: 4:3 HC-400W: 4:3/16:9	
Input Voltage	DC +11V - 16V	
Power Consumption	HC-400: Approx. 14W (excluding VF) HC-400W: Approx. 15W (excluding VF)	
Ambient Temperature	-10°C - +40°C (+14°F - +104°F)	
External Dimensions	W126 x H281 x D170mm (W4.96 x H11.1 x D6.7 inches)	
Weight	Approx. 26.kg (5.7 lbs) (excluding VF, Lens, Mic, VCR Adaptor)	

Design and specifications are subject to change without notice.

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