SONY®

Digital Video Camera

DXC-D55 Series

DXC-D55
DXC-D55P
DXC-D55WS
DXC-D55WSP

14-bit Full-Digital Production Camera –
Offers Top-quality SDTV Video Production Opportunities

From the very first model, Sony DXC Series standard definition (SD) production cameras have been widely accepted by a great number of video professionals around the world, due to their excellent picture performance, system versatility, and cost efficiency. Sony is now proud to introduce the new DXC-D55 Series which uses the latest 14-bit A/D conversion circuit as well as the field-proven 2/3-inch type Power HAD™ EX CCDs to further enhance the DXC portfolio.

The DXC-D55 Series consists of two cameras: the DXC-D55 4:3 model, and the DXC-D55WS 16:9/4:3 switchable model. Both models incorporate three 2/3-inch type Power HAD EX CCDs and the latest 14-bit A/D conversion circuit. These key devices deliver excellent sensitivity and signal-to-noise ratio, together with reduced smear level compared to that of the previous model. In addition to superb picture quality, these cameras offer extremely precise and flexible image controls such as highlight control, contrast control, and detail control, thanks to the sophisticated DSP LSI with more than 30-bit accuracy.

Another important characteristic of the DXC-D55/D55WS Series is its system flexibility. Two types of camera control unit are available – the CCU-D50/D50P for multi-core operation, and the CCU-TX50/TX50P for triax operation. Furthermore, the RCP-D50/D51 Remote Control Unit is also available for the series.

With class-leading SD picture quality, operational conveniences, and system flexibility, the Sony DXC-D55/D55WS Series brings new opportunities for high-quality, creative productions to a wide range of video professionals at an affordable price.

* In this brochure, DXC-D55 refers to both the DXC-D55 for
  NTSC and the DXC-D55P for PAL, while DXC-D55WS refers to
 both the DXC-D55WS for NTSC and the DXC-D55WSP for PAL.

FEATURES

Excellent Picture Quality

Three-chip 2/3-inch Type Power HAD EX CCDs

The DXC-D55/D55WS Series is equipped with the field-proven three-chip 2/3-inch type Power HAD EX CCDs, offering high horizontal resolutions of 920* TV lines. These high-performance CCDs also provide an excellent sensitivity of F11 (at 2000 lx, 3200K), a remarkable signal-to-noise ratio of 65 dB (NTSC)/63 dB (PAL), and an extremely low smear level of -145 dB (typical).

*On DXC-D55 and DXC-D55P models
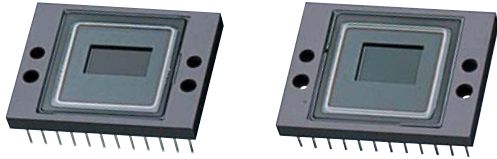
Power HAD EX CCDs

14-bit A/D Conversion

The Sony DXC-D55/D55WS incorporates a high-quality14-bit A/D conversion circuit that allows images captured by the Power HAD EX CCDs to be processed with four times the precision than 12-bit A/D converters. In particular, this higher resolution reproduces the contrast more faithfully in mid-to-dark-tone areas of the picture. In addition, the 14-bit accuracy helps to eliminate pre-knee signal compression at highlight areas, and allows the camera to clearly reproduce a high-luminance subject.
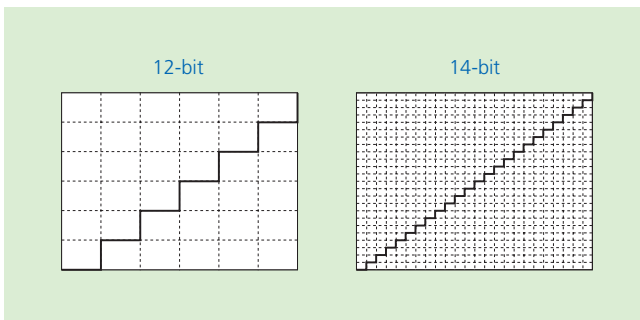
High-intergrity 14-bit A/D Conversion

Advanced Digital Signal Processing (ADSP)

A key indicator of quality in a DSP camera is how many bits are used in its nonlinear processes, such as gamma correction. The DXC-D55/D55WS Series uses more than 30 bits, thus minimizing rounding errors and maintaining the high-quality images captured by the Power HAD EX CCDs. This advanced digital signal processing (ADSP) also enables highly sophisticated image controls, such as knee saturation, adaptive highlight control, and skin-tone detail controls.
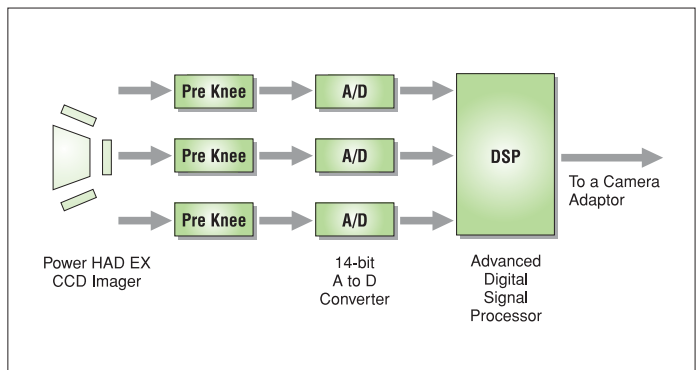
High-performance Digital Signal Processing

CREATIVE VERSATILITY

Knee Saturation Control

In general, shooting very bright portions of an object such as key light reflections from a person's forehead can reduce color saturation and change the hue in highlight areas. The knee saturation control function incorporated in the DXC-D55/D55WS Series effectively reduces this 'washed-out' effect on saturation and hue changes, and reproduces far more natural color in highlight areas.

Knee Saturation Control Off

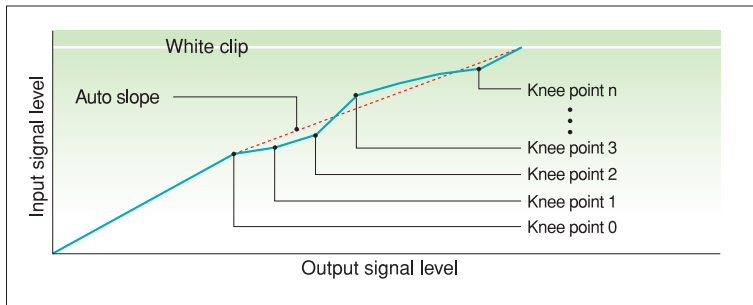Knee Saturation Control On

Images simulated

Adaptive Highlight Control Off

Adaptive Highlight Control On

Images simulated

Knee Curve Image

Low Key Saturation Off

Low Key Saturation On

Skin-tone Detail Control Off

Skin-tone Detail Control On

Adaptive Highlight Control

The DXC-D55/D55WS Series offers an outstanding overexposure control by applying multiple knee-points/slopes to handle highlight areas in a dynamic manner. By analyzing the highlight areas of a scene, the camera automatically sets and optimizes multiple knee points/slopes accordingly. This enables the reproduction of extremely difficult scenes (for example, an interior scene with a bright illuminant such as sunlight in the background) with wide exposure latitude. The adaptive highlight control applies only to input video levels in excess of the knee point; the middle- and low-luminance parts of the video signal are unaffected by this control.

Low Key Saturation

With conventional cameras, low-light areas can be subject to reduced saturation, resulting in the color in these areas being 'washed-out'. The low key saturation function incorporated in the DXC-D55/D55WS Series helps eliminate this problem by optimizing the amplification of color saturation at low light levels, providing more natural color reproduction.
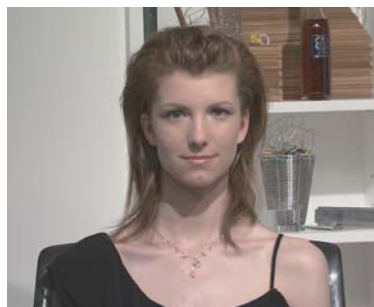
Skin-tone Detail Control

The skin-tone detail control function in the DXC-D55/D55WS Series allows softening of the skin-tone detail in the facial area, while maintaining the sharpness of other parts of the picture. The skin-tone detail area can be selected simply and quickly, using an area-detect cursor in the viewfinder screen. The color range for skin-tone detail and the skin detail level can also be selected manually, using the viewfinder menu system.

OPERATING VERSATILITY

Enhanced Ease of Operation

Recognizing the importance of making camera operation as quick and straightforward as possible, DXC-D55/D55WS cameras provide several convenient functions enabling operators to start shooting with minimum setup procedures, and in less time.

EZ Focus
The EZ Focus function allows accurate focus adjustments without manually opening the lens iris. Simply by pushing the EZ Focus button, the iris automatically opens to reduce the depth of field and make focusing significantly easier. At the same time, the electronic shutter is automatically set to obtain the correct exposure.

EZ Mode
Settings for key camera parameters are instantly set to the standard or auto position simply by pressing the EZ Mode button – making the camera instantly ready for shooting. This feature is very convenient when operators require fast camera setup.

Auto-Tracing White Balance (ATW)
The DXC-D55/D55WS camera features a convenient Auto Tracing White Balance (ATW) function, which automatically adjusts white balance as lighting conditions change. This function is very useful when shooting in rapidly changing lighting conditions, such as when moving from indoor to outdoor locations.

Built-in Optical ND Filter and Electronic CC Function

The DXC-D55/D55WS Series provides optimum light and color temperature control by using a built-in optical ND (Neutral Density) filter wheel and electronic CC (Color Correction) function. The use of electronic color correction allows all filters in the filter wheel to be of the ND type, providing the operator with great flexibility in depth-of-field and exposure control. Electronic color correction can also be controlled using a remote controller, for even easier operation.

Easy-to-see Viewfinder

The DXC-D55/D55WS* is equipped with the DXF-801 1.5-inch** 4:3 monochrome viewfinder as standard. The DXF-20W 2.0-inch** 16:9 monochrome viewfinder is also available as an option. Furthermore, for studio operations, the wider DXF-51 5.0-inch** monochrome viewfinder can be mounted on the camera adaptor.

* The DXF-801 is not included in the DXC-D55H/D55PH package.
** Viewable area measured diagonally

VF Light

Backlit Switch Panel

The DXC-55/D55WS's switch panel is backlit, allowing operators to see switch positions in dark environments.

Memory Stick Storage of Camera Setup Parameters

The DXC-D55/D55WS Series is capable of saving and recalling setup parameters such as scene files, reference files, and lens files, via Memory Stick™ media. This allows users to effectively manage camera parameters for individual scenes, plus individual operators' camera-setup preferences, such as viewfinder indicator settings. Setup parameter files stored on a Memory Stick media card can be transferred to another DXC-D55/D55WS camera or a RCP-D50/D51 Remote Control Unit, allowing quick, easy setup in multiple camera systems. What's more, setup files can be loaded to a PC equipped with a Memory Stick slot, enabling them to be e-mailed as attachments and shared with other cameras.

* The MSH-128/64/32 is the only "Memory Stick" media that has been operationally tested with this product. (The MSH-64/32 is no longer available.)

Factory-preset Matrix

The DXC-D55/D55WS Series is equipped with several types of factory-preset matrix files which allow operators to instantly set up camera parameters that match common lighting situations, such as STANDARD, HIGH SATURATION, FLORESCENT, etc.

Other Convenient Features

- Programmable gain (-3/0/3/6/9/12/18/24/30/36 dB)
- Variable-speed electronic shutter
- Clear Scan™(CLS) function: 60.1 (NTSC)/50.2 (PAL) Hz to 6000 Hz
- Monitor output
- Built-in 1 kHz audio reference
- Date-and-time superimposition on the video signal and viewfinder
- Enhanced Vertical-Definition System (EVS)
- Auto iris mode (spot, backlight)
- Mic low cut
- Dual zebra

Adjustable Shoulder Pad

The position of the DXC-55/D55WS's shoulder pad can be adjusted – either forwards or backwards – to provide the operator with a comfortable, well-balanced camera when docked with a camera adaptor.

SYSTEM VERSATILITY

The high picture quality and operability of DXC-D55/D55WS cameras is supported by a range of peripherals that make camera system installation very smooth, both in the studio and out in the field.
The DXC-D55/D55WS can be configured in two main operating styles: Multi-core CCU and Triax CCU operation. Easy-to-use remote control panels are also available for added operational convenience.

Multi-core CCU Operation – for End-to-end Digital Systems
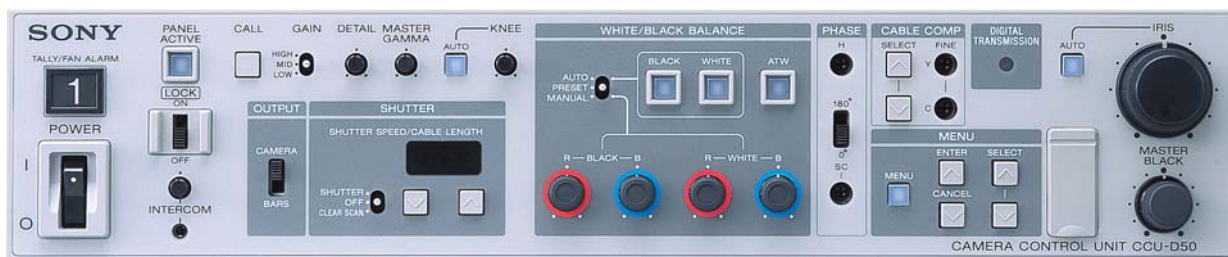## CCU-D50/D50P and CA-D50

With the CA-D50 Camera Adaptor attached, the DXC-D55/D55WS can be remotely controlled from the CCU-D50/D50P Multi-core Camera Control Unit using a CCZ-A cable (26-pin). The video and audio output of the CA-D50 Camera Adaptor are transferred to the CCU-D50/D50P Camera Control Unit as an SDI signal[1] through a CCZ-A cable up to 75 m (246 feet) long. This combination allows for the establishment of a full digital-acquisition system.

The CCU-D50/D50P system supports the following features:

- Digital or analog signal switchable transmission
- Up to 75 m (246 feet) SDI transmission via a CCZ-A cable (26-pin)
- Up to 200 m (656 feet) SDI transmission using a separate low-loss coaxial video cable in addition to a CCZ cable
- Analog transmission for longer control distances of up to 300 m (984 feet) via a CCZ-A cable

- Analog composite output and one of the following outputs: SDI, Y/R-Y/B-Y, RGB, Y/C
- Wide variety of control functions
- Compatibility with RCP-D50 and RCP-D51 Remote Control Panels
- Support for major intercom systems (two-wire/four-wire/RTS/Clearcom)
- Teleprompter support
- Red/Green tally indication[2]
- Fan alarm LED[2]

  [1] Embedded audio is not supported.
  [2] The tally and fan alarm share the same LED.

CCU-D50 Front Panel

CCU-D50 Rear Panel

CCU-TX50 Front Panel

CCU-TX50 Rear Panel

Triax CCU Operation – for Wide-bandwidth Transmission
CCU-TX50/TX50P* and CA-TX50/TX50P

With the CA-TX50/TX50P Triax Camera Adaptor attached, the DXC-D55/D55WS can be remotely controlled from the CCU-TX50/TX50P Camera Control Unit using a triax cable, the use of which enables sophisticated remote control over extended operating distances. A wide-bandwidth transmission system is employed, enabling the high resolution images of DXC-D55/D55WS cameras to be transmitted with virtually no drop in resolution.

The CCU-TX50/TX50P supports the following features:

- Wide-bandwidth transmission
  (10 MHz for Y and 4.5 MHz for R-Y/B-Y)
- High-quality analog component video transmission
- Long-distance transmission
  (eg. 1500 m via a ø14.5 mm cable)
- Compact design – half rack width and 3U height
- Wide range of advanced control functions
- Compatibility with the RCP-D50 and RCP-D51 Remote Control Panels
- Three SDI outputs or three composite outputs

- One component output
  (Y/R-Y/B-Y or R/G/B selectable)
- Three inputs for return video (BNC type)
- Teleprompter support
- Red/Green tally indication
- Support for major intercom systems
  (four-wire/RTS/Clearcom)
- Program audio input
- Two-channel microphone system
  (two XLR connectors)

  * Upgrading is required for the existing CCU-TX50/TX50P to interface with the DXC-D55.

Remote Control Panels

Two types of remote controllers are available for remote operation of the DXC-D55/D55WS camera, each offering direct camera control.

RCP-D50 (Joystick Type)
RCP-D51 (Dial Type)

The RCP-D50 and RCP-D51 have been designed for use with Sony DXC-D55/D55WS cameras. The RCP-D50 is a joystick-type controller, while the RCP-D51 is a dial-type controller. Both are equipped with a 3.5-inch* color touch panel LCD screen and offer extensive control of camera functions through easy-to-use menu-based operations. The LCD also allows the incoming camera image to be monitored – a feature that comes in handy when identifying which RCP is controlling which camera in multi-camera systems.

Another convenient feature is the Memory Stick system, which allows various scene files to be stored on and recalled from the Memory Stick media, and loaded to either a different RCP-D50/D51 controller, or to a DXC-D55/D55WS camera.

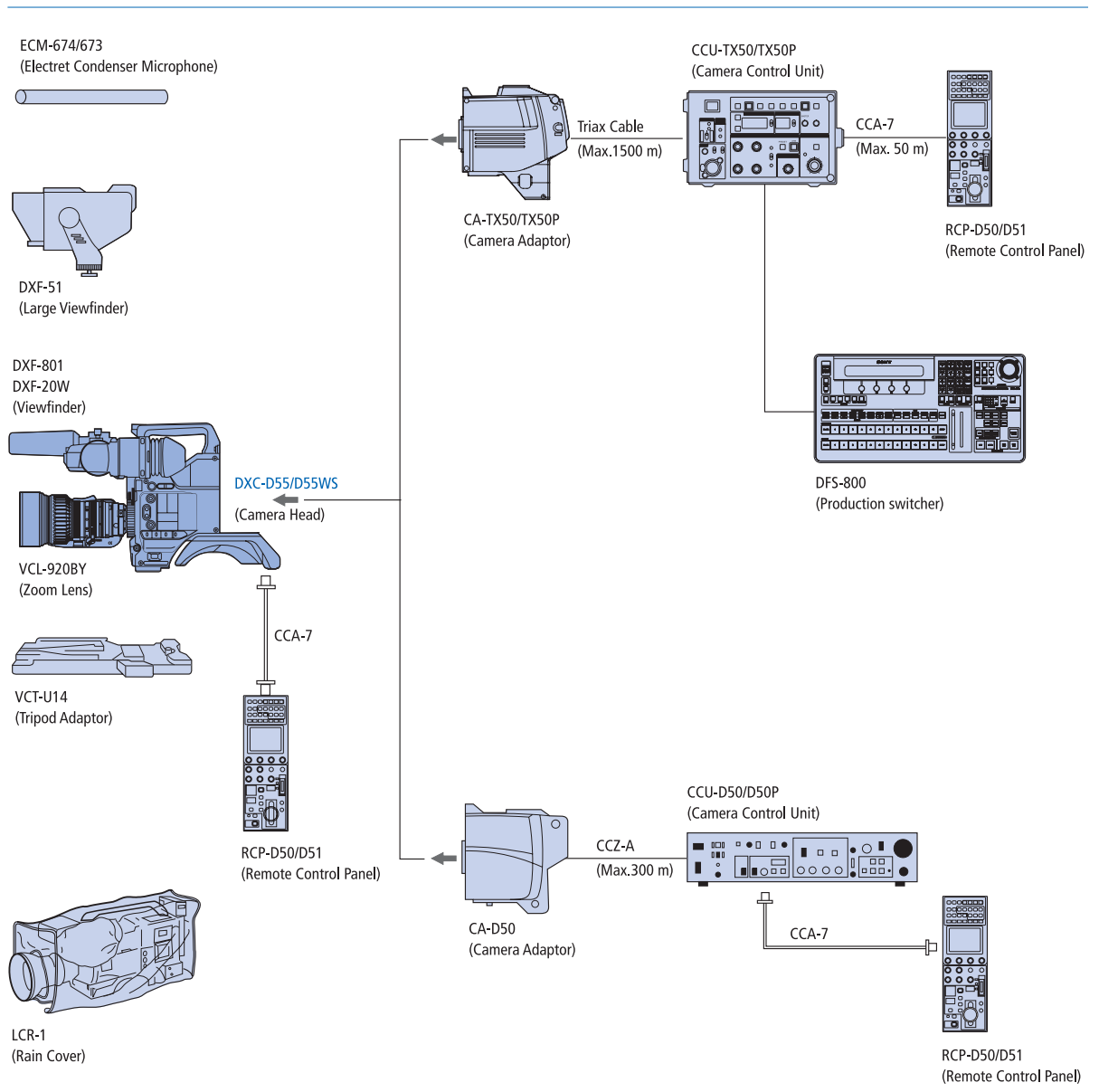* Viewable area measured diagonally

RCP-D50 (Joystick)

RCP-D51 (Dial)

SYSTEM CONFIGURATION

ECM-674/673
(Electret Condenser Microphone)

CCU-TX50/TX50P
(Camera Control Unit)

Triax Cable
(Max.1500 m)

CCA-7
(Max. 50 m)

CA-TX50/TX50P
(Camera Adaptor)

RCP-D50/D51
(Remote Control Panel)

DXF-51
(Large Viewfinder)

DXF-801
DXF-20W
(Viewfinder)

DXC-D55/D55WS
(Camera Head)

DFS-800
(Production switcher)

VCL-920BY
(Zoom Lens)

CCA-7

VCT-U14
(Tripod Adaptor)

RCP-D50/D51
(Remote Control Panel)

CCU-D50/D50P
(Camera Control Unit)

CCZ-A
(Max.300 m)

CA-D50
(Camera Adaptor)

CCA-7

LCR-1
(Rain Cover)

RCP-D50/D51
(Remote Control Panel)

PRODUCT CONFIGURATION

	4:3 model			16:9/4:3 model	
	DXC-D55H DXC-D55PH	DXC-D55L DXC-D55PL	DXC-D55PK	DXC-D55WSH DXC-D55WSPH	DXC-D55WSL DXC-D55WSPL
VCT-U14 Tripod Adaptor	Option	Supplied	Supplied	Option	Supplied
DXF-801 Viewfinder	Option	Supplied	Supplied	Option	Supplied
Microphone	Option	Supplied	Supplied	Option	Supplied
Lens (VCL-920BY)	Option	Option	Supplied	Option	Option

OPTIONAL ACCESSORIES

CA-D50
Camera Adaptor
(Multi-core)

CA-TX50/TX50P
Camera Adaptor (Triax)

CCU-D50/D50P
Camera Control Unit
(Multi-core)

CCU-TX50/TX50P
Camera Control Unit
(Triax)

RCP-D50
Remote Control Panel

RCP-D51
Remote Control Panel

DXF-801
1.5-inch[1] 4:3 Monochrome
Viewfinder

DXF-20W
2-inch[1] 16:9 Monochrome
Viewfinder

DXF-51
5-inch[1] 4:3 Monochrome
Viewfinder

VCT-U14
Tripod Adaptor

AC-DN10
AC Adaptor

ECM-674/673
Electret Condenser
Microphone

CAC-12
Microphone Holder

WRR-861A/861B
UHF Synthesized Tuner
(can be mounted on
the CA-TX50)

WRR-862A/862B
UHF Synthesized Tuner
(can be mounted on
the CA-TX50)

CCA-7-5/25
Connecting Cable
(10-pin - 10-pin)

CCZ-A5/A10/A25
Connecting Cable
(26-pin - 26-pin)

MSH-128
Memory Stick

LCR-1
Rain Cover

LC-HB330
Hard Carrying Case

[1] Viewable area measured diagonally

Lenses from Other Manufacturers

YJ20x8.5B IRS/VRS/KRS
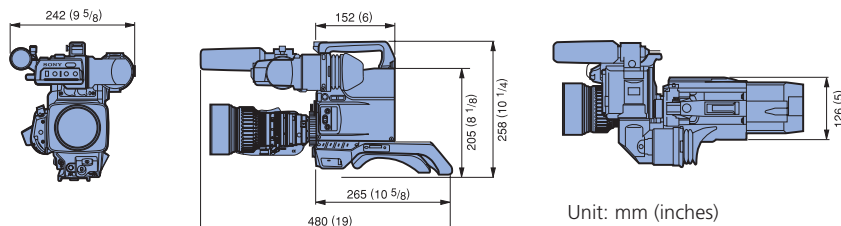(Canon)

YJ13x6B IRS/KRS
(Canon)

A13x6.3 BERM/BRM
(Fujinon)

A20x8.6 BERM/BRM
(Fujinon)

For details, please contact each manufacturer

SPECIFICATIONS

	DXC-D55	DXC-D55P	DXC-D55WS	DXC-D55WSP
General				
Power requirements	DC 12 V (10.5 to 17 V)			
Power consumption	14 W			
Operating temperature	-10 °C to +45 °C (+14 °F to +113 °F)			
Storage temperature	-20 °C to +60 °C (-4 °F to +140 °F)			
Operating humidity	Less than 85%			
Mass (camera head only)	2.2 kg (4 lb 13 oz)			
Signal inputs/outputs				
Video output	Analog composite, BNC, 1.0 Vp-p, sync negative			
Monitor output	Analog composite, BNC, 1.0 Vp-p, sync negative			
Microphone input	XLR-3-pin			
Other inputs/outputs				
Camera/VTR interface	Pro 76-pin Digital, Pro 50-pin			
Lens	12-pin			
VF	20-pin			
Remote	10-pin			
Camera performance				
Pickup device	3-chip 2/3-inch type Power HAD EX CCD			
Aspect ratio	4:3		16:9/4:3 switchable	
Total picture elements (H x V)	1038 x 1008	1038 x 1188	1038 x 1008	1038 x 1188
Effective picture elements (H x V)	980 x 494	980 x 582	980 x 494	980 x 582
Optical system	F1.4 prism system			
Built-in filters	1: Clear, 2: 1/4ND, 3: 1/16ND, 4: 1/64ND			
Lens mount	Sony 2/3-inch bayonet mount			
Signal system	NTSC color system	PAL color system	NTSC color system	PAL color system
Scan format	2:1 interlaced, 525 lines, 60 fields/s	2:1 interlaced, 625 lines, 50 fields/s	2:1 interlaced, 525 lines, 60 fields/s	2:1 interlaced, 625 lines, 50 fields/s
Horizontal scan frequency	15.734 kHz	15.625 Hz	15.734 kHz	15.625 Hz
Vertical scan frequency	59.94 Hz	50 Hz	59.94 Hz	50 Hz
Sync system	Internal and External with the VBS or BS signal			
A/D conversion	14 bits			
Sensitivity	F11 at 2000 lx (3200 K, 89.9% reflectance) (typical)			
Minimum illumination	0.5 lx with F1.4, Hyper gain (36 dB)/0.8 lx with F1.8, Hyper gain (36 dB)			
Smear level	-145 dB (typical)			
Video S/N ratio (typical)	65 dB	63 dB	65 dB	63 dB
Horizontal resolution	920 TV lines		850 TV lines (4:3 mode) 800 TV lines (16:9 mode)	
Vertical resolution	400 TV lines (without EVS) 450 TV lines (with EVS)	480 TV lines (without EVS) 530 TV lines (with EVS)	400 TV lines (without EVS) 450 TV lines (with EVS)	480 TV lines (without EVS) 530 TV lines (with EVS)
Shutter speed	OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000 s	OFF, 1/60, 1/250, 1/500, 1/1000, 1/2000 s	OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000 s	OFF, 1/60, 1/250, 1/500, 1/1000, 1/2000 s
Clear scan	60.1 to 6000 Hz	50.2 to 6000 Hz	60.1 to 6000 Hz	50.2 to 6000 Hz
Gain selection	-3, 0, 3, 6, 9, 12, 18, 24, 30, 36 dB			
Registration	0.05% (all zones, without lens)			
Geometric distortion	Below measurable level			
Viewfinder: DXF-801 (supplied with DXC-D55L/D55PL/D55PK/D55WSL/D55WSPL package)				
CRT	1.5-inch monochrome, 4:3/16:9 switchable			
Indicators	REC TALLY (2), TAKE TALLY, BATT, SHUTTER, GAIN UP			
Horizontal resolution	600 TV lines			
Power requirements	DC 12 V			
Power consumption	2.4 W			
Mass	620 g (1 lb 9 oz)			
Dimensions (W x H x D)	241 x 91 x 203 mm (9 1/2 x 3 5/8 x 8 inches)			
Lens: VCL-920BY (supplied with DXC-D55PK package only)				
Focal length	8.5 to 170 mm			
Zoom	Manual or power selectable			
Zoom ratio	20x			
Maximum aperture	1:1.8			
Aperture	Manual or automatic selectable			
Focusing range	Infinity to 0.9 m			
Filter attachment threads	82 mm dia. 0.75 mm pitch			
Mounting	Sony 2/3-inch type bayonet mount			
Mass	Approx. 1.3 kg (2 lb 14 oz) including lens hood			
Dimensions (W x H x D)	122 x102 x 210 mm (4 7/8 x 4 1/8 x 8 3/8 inches) including lens hood, excluding lens grip			
Supplied accessories				

DXC-D55H/D55PH/D55WSH/D55WSPH: Operating instructions (x1), Lens mount cap (x1), Flange focal length adjustment test chart (x1)

DXC-D55L/D55PL//D55WSL/D55WSPL: Operating instructions (x1), Lens mount cap (x1), Flange focal length adjustment test chart (x1), DXF-801 Viewfinder (x1), Microphone (x1), Wind screen (x1), VCT-U14 Tripod adaptor (x1)

DXC-D55PK: Operating instructions (x1), Lens mount cap (x1), Flange focal length adjustment test chart (x1), DXF-801 Viewfinder (x1), Microphone (x1), Wind screen (x1), VCT-U14 Tripod adaptor (x1), VCL-920BY Zoom lens (x1)

DIMENSIONS

Unit: mm (inches)

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