

SONY®

CCIR/PAL

CCD Colour Video Camera

DXC-LS1P



Lens and cable shown are optional.

Small is Beautiful



DXC-LS1P

◀ Actual Size

Good Things in a Small Package

The Sony DXC-LS1P KidsCam proves that good things come in small packages. Despite its remarkably small size – the camera head is only 35 mm long and 12mm in diameter – it comes with a host of advanced features that you won't find in many larger cameras, plus convenient controls that make shooting virtually automatic.

High Performance Components

The DXC-LS1P consists of a camera head and a camera control unit, each a marvel of technology. The camera head features a Sony Interline Transfer Hyper HAD™ (Hole Accumulated Diode) CCD image sensor that packs 440,000 picture elements into only a quarter of an inch. The camera control unit incorporates a powerful DSP (Digital Signal Processor) which provides enhanced picture quality, plus the automatic adjustment features that make the camera so easy to use.

Excellent Picture Quality

Horizontal resolution is 460TV lines, sensitivity is F5.6 at 2,000 lx and the signal-to-noise ratio is 44 dB, for outstanding brightness and excellent all-round performance. Advanced colour matrix technology allows you to adjust colours individually without changing the overall white balance, for vivid, lifelike reproduction of whatever you are shooting.

Versatility

In industrial and broadcasting applications, in security installations, and in the fields of medicine and dentistry – across the entire range of video imaging – the DXC-LS1P opens up a new realm of possibilities.

Take it where you thought a camera could never go.



Industrial

Outstanding portability and an assortment of optional accessories make the DXC-LS1P an invaluable tool in hazardous and hard-to-reach environments.



Microscopy

With a computer interface and a variety of image enhancement features, the DXC-LS1P has the precision you require in critical inspection applications.



Medical and Dental

Ease of handling and superb picture quality make the DXC-LS1P ideal for use in the fields of medicine and dentistry.



Security

The DXC-LS1P can be installed in elevators, hotel lobbies, shop windows – anywhere that unobtrusive, high-quality surveillance is required.



Sports shooting

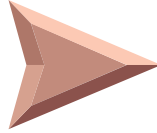
Energize your coverage of sports and other live events with shots from striking new angles. Take your viewers into the centre of the action.

Capture Colours the Way They Really Are

To adjust only the redness of the picture...



Before adjustment



Adjusted to R: +40, G: 0, B: 0

Unsurpassed Realism

White balance adjustments are completely automatic. Just point at a white object and let the camera do the rest. But where most cameras stop, the DXC-LS1P has only begun. Colour matrix technology adds another dimension of authenticity by allowing you to adjust

the R, G and B colours independently, while viewing the monitor, and without changing the overall white balance. You can easily adjust the picture until the object on the screen looks exactly like the object in front of the camera.

Convenient Controls

An on-screen menu system gives you easy access to all of the camera's built-in features. But usually you won't even need to open a menu. Just press the DISPLAY button to call up your favourite settings and begin shooting. For special situations, you can save up to two sets of menu selections and call them up at any time.

By displaying menus one line at a time, you can also make adjustments while viewing the actual picture on the screen.



Exchangeable Camera Head

In case the camera head accidentally drops on the floor and gets damaged, Sony's sophisticated built-in electronics enable you to exchange only the camera head without needing to buy an entire new set.



Lens and cable shown are optional.

Advanced DSP Functions

Automatic Exposure Control

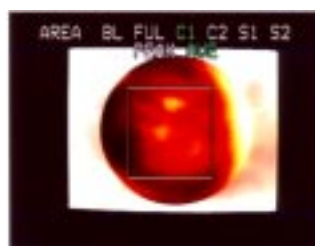
A CCD IRIS™ function combined with AGC (Automatic Gain Control) provides automatic control over incoming light. If the object in front of the lens is too bright, the camera switches automatically to a higher shutter speed. If the object is too dark, it automatically increases the gain. And the AE (Automatic Exposure) level can be finely adjusted from -60 to +60. The result is pictures that are always perfectly exposed.

Automatic Backlight Adjustments

The DXC-LS1P can distinguish backlit from frontlit scenes and compensate accordingly, adjusting exposure automatically to objects in the scene you want to shoot.

Light Metering Areas

The DXC-LS1P can measure light and make exposure adjustments in 5 different areas (whole picture, small area at centre, large area at centre, small slit and large slit). Objects in these areas are always appropriately lit, regardless of the brightness of surrounding objects.



Small area at centre (C1)



Large area at centre (C2)



Small slit (S1)



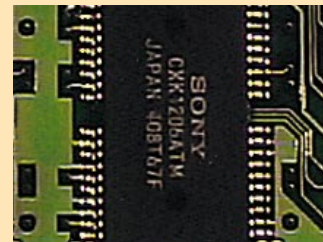
Large slit (S2)

Electronic Zoom

The electronic zoom provides enlargements from 1.00× to 3.00×. This is especially effective because large zoom lenses cannot be used with cameras as small as the DXC-LS1P.



Original



×3.00

Long Term Exposure

When shooting very dark objects, you can set the shutter speed manually to 1/50 of a second or more and specify from 2 to 512 fields. Longer shutter speeds allow more light to accumulate on the CCD sensors, for a remarkable enhancement in sensitivity.

Note: To use this function, an external memory unit/board is required.



Original



Gamma:+15

Variable Gamma

By manually varying the gamma parameters, you can increase the contrast in lighter or darker parts of the picture, for a clear view of specific details.

Outline Enhancers

While viewing the monitor, you can emphasize outlines in the vertical and horizontal directions, for excellent results in image analysis applications.



Low mode



Hi mode



Full mode

Colour Bars

The DXC-LS1P can display colour bars in 3 different sizes. The low and hi-screen modes allow you to make colour adjustments while comparing objects on the screen against colour bars – a feature available only from Sony.

Innovative Flicker Canceller

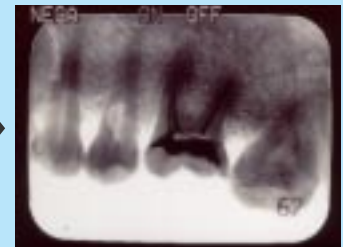
The DXC-LS1P cancels the flicker of fluorescent lights by automatically adjusting gain, freeing the electronic shutter for other uses.

Negative and Positive Modes

You can automatically shoot positive scenes as negative, or vice versa, in both black and white and colour. This is especially effective for viewing X-rays and other special images.



Negative



Positive

B&W Mode

B&W mode provides sharp images free from colour noise.

Flexible System Configuration

Computer Control Interface

The DXC-LS1P is equipped with an RS-232C serial interface, making it possible to control all of its functions from a computer. The date and time are automatically superimposed on the picture for added convenience in recording.



Genlock

The camera can be synchronized with external VBS signals, for the precision required in broadcast and production environments.

Video Outputs

The DXC-LS1P fits into any system, with BNC and 12-pin multi-connectors available for VBS (composite) video output, and S-video and 12-pin multi connectors for Y/C.

Function Menu

Control items	Selection		
PAGE 1			
AE MODE	AUTO/OFF		
AE LEVEL	-60 to 0 to +60		
AREA	BL(Backlight compensation)/ FUL (Full)/C (Centre)1/C2/S (Slit)1/S2 PEAK/AVE (average) switchable		
FLICKER (canceller)	AUTO/OFF		
SHUTTER	AUTO/MANUAL/OFF		
AE LEVEL	-60 to 0 to +60		
MANUAL	2 to 512 FLD (fields) ODD/EVEN switchable		
GAIN	AGC/MANUAL		
AE LEVEL	-60 to 0 to +60		
MANUAL	0 to 12dB		
PAGE 2			
W.B. (White Balance)	ATW/AWB/5600(K)/3200(K)		
R (Paint)*	-128 to 0 to +127		
B (Paint)*	-128 to 0 to +127		
PEDESTAL	-10 to 0 to +40		
GAMMA	-16 to 0 to +15		
H ENH (enhancer)	-16 to 0 to +15		
V ENH (enhancer)	-16 to 0 to +15		
ZOOM	ON/OFF		
ON	×1.00 to ×3.00		
PAGE 3			
BAR	FULL/HI/LOW/OFF		
NEGA	ON/OFF		
OUTPUT	VBS/YC		
BAUD RATE	4800/9600/19200		
SC PHASE	0 to +255		
SC 0/180	0/180		
H PHASE	0 to +255		
PAGE 4			
COLOUR MATRIX	ON/OFF		
R	-60 to 0 to +60		
G	-60 to 0 to +60		
B	-60 to 0 to +60		
COLOUR	ON/OFF		
PAGE 5			
MEMORY SAVE	YES/NO		
MEMORY RESET	YES/NO		

*AWB, 5600(K) and 3200(K) can be finely adjusted with this function.

Front Panel



Rear Panel



Optional Accessories

Camera Adaptor CMA-D2CE



The CMA-D2CE supplies DC 12V to the DXC-LS1P. Connecting the CMA-D2CE directly to the DXC-LS1P allows cables to be extended up to 100m.

Specifications:

Connectors: CAMERA (12-pin MULTI)
CAMERA (4-pin DIN)
VIDEO OUT (BNC)
S VIDEO OUT (Mini DIN 4-pin)
GENLOCK IN (BNC)

DC out: 13V, 1.3A

Operating temperature: -5°C to 45°C (23°F to 113°F)

Power requirements: AC 100 to 240V, 50/60Hz

Power consumption: 24.5W

Dimensions (w/h/d): 210 × 50 × 200mm (8 3/8 × 2 × 7 7/8 inches)

Mass: 1.1kg (2 lb 7 oz)

Supplied accessories: AC power cord, Operation manual

Camera Adaptor AC-E90HG



The AC-E90HG supplies DC 9V to the DXC-LS1P.

Specifications:

DC out: 9V, 800mA

Power requirements: AC 220 to 230V, 50/60Hz

Power consumption: 14W

Cable length: 2m (2.2 yards)

Mass: 500g (1 lb 2 oz)

Dimensions (w/h/d): 58 × 86 × 51mm (2 3/8 × 3 1/2 × 2 inches)

Lenses



Models	VCL-04UVM	VCL-12UVM
Mount:	Ultra mount	Ultra mount
Focal length:	4mm	12mm
Maximum aperture ratio:	1:1.4	1:2.0
Filter size:	M10.5 × 0.5mm	M10.5 × 0.5mm
Back focal length:	5.00mm (IN AIR)	10.82mm (IN AIR)
Focusing range:	55mm ~ ∞	200mm ~ ∞
Mass:	4g (0.14 oz)	5g (0.17 oz)
Dimensions:		

Unit: mm (inch)

C-mount Adaptor LO-UCMT



Specifications

Mount: C-mount - Ultra mount

Mass: 8g (0.3 oz)

Dimensions: Ø29 × 12.9mm (1 3/16 × 17/32 inches)

Camera Cable CCMC-16P03 /10 (3/10m) 16-pin↔20-pin



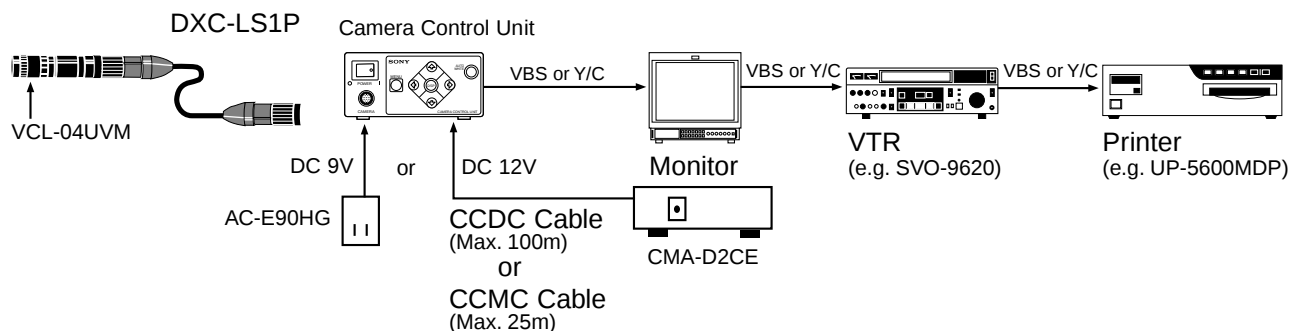
DC Cable CCDC-5/10/25/50A/100A (5/10/25/50/100m) 12-pin↔4-pin



12-pin Multi Cable CCMC-12P02 /05/10/25 (2/5/10/25m) 12-pin↔12-pin



Typical System



Specifications

Video	
Image device:	1/4-inch Interline Transfer Hyper HAD CCD
Picture elements:	752 (H) × 582 (V)
Sensing area:	3.2 × 2.4mm
Signal system:	PAL/CCIR standard
Scanning system:	2:1 interlaced, 625 lines
Horizontal frequency:	15.625kHz
Vertical frequency:	50Hz
Sync system:	Internal or external with VBS
Phase control:	H (0 to +255)/SC (0/180, 0 to +255)
Horizontal resolution:	460TV lines
Sensitivity:	F5.6 at 2,000 lx
Minimum illumination:	10 lx (F1.2)
Signal-to-noise ratio:	44dB

AE mode:	ON/OFF switchable
AE level:	$\bar{n}60$ to 0 to +60
Gain control:	AGC/0 to +12dB (1dB steps)
Electronic shutter:	OFF/MANUAL/AUTO MANUAL: 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/10000, 1/20000, 1/40000 (seconds) 2 to 512 fields, ODD/EVEN switchable

Detection method:	Peak/average switchable
White balance:	ATW (Auto Tracing White Balance)/AWB (Auto White Balance)/ 5600K/3200K (R/B paint: ñ128 to 0 to +127)

H Enhancer: ñ16 to 0 to +15

Zoom: ON (×1.00 to ×3.00)/OFF switchable

R: ñ60 to 0 to +60 G: ñ60 to 0 to +60 B: ñ60 to 0 to +60

Colour mode:	ON/OFF switchable
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Negative/Positive reverse:ON/OFF switchable

Flicker canceller: AUTO/OFF switchable

Video out: VBS: 1.0Vp-p, 75 Ω , sync negative

C: 0.3Vp-p, 75%, without sync

General

Power requirements: DC 12V (Supplied from CMA D3CE)

Power Requirements. DC 12V (Supplied from CMA-D2CE)
DC 8V (Supplied from AC-E80HG)

Operating temperature: 0°C to 40°C (32°F to 104°F)

Maximum cable length: 10m using 10m optional cable (CCMC 16B10)

Camera head: 89 (0.3 oz) (excluding supplied cable)
Camera control unit: Approx. 665g (1 lb 7 oz)

Connectors

Lens mount:	Ultra mount
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Camera control unit: CAMERA (20-pin), VIDEO OUT (BNC), DC IN/VBS (12-pin, DC jack).

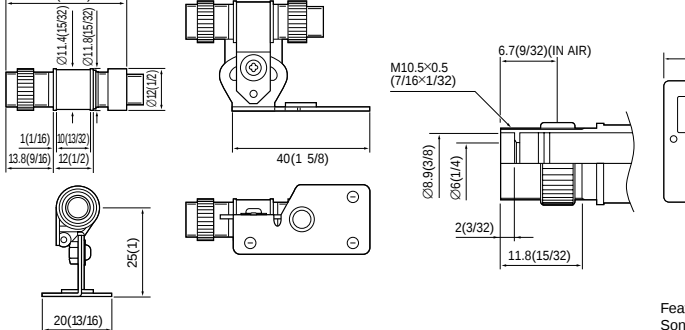
Quantified Accessories

Tripod adaptor, Lens mount cap, Operation manual

Unit: mm (inch)

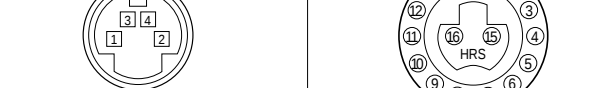
Unit: mm (inch)

40(15/8)



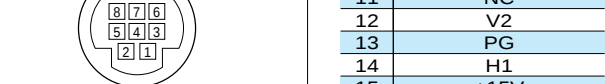
DXC-LS1P Connector Pin Assignments

Camera control unit	Camera head
DIN 4-PIN (Y/C)	16-PIN



1	Y (G)
2	C (G)
3	Y (X)
4	C (X)

9	V1
10	NC
11	NC

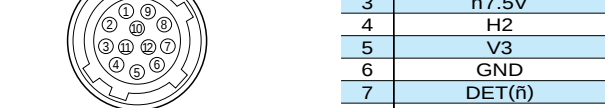


1	RTS
2	CTS
3	TXD
4	GND
5	RXD
6	NC
7	NC
8	NC

15	+15V
16	+5V

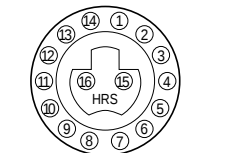
20-PIN (CAMERA)

1	+15V
2	CCD OUT
3	$\approx 3.5V$

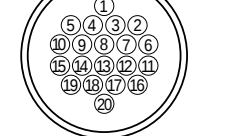


1	GND	8	NC
2	+12V IN	9	NC
3	GND	10	V4
4	Y.OUT/VBS OUT	11	SUB
5	GND	12	DET(+)
6	NC	13	NC
7	GENLOCK IN	14	NC
8	GND	15	H1
9	C OUT	16	V1
10	GND	17	NC
11	+12V IN	18	PG
12	GND	19	V2
		20	+5V

Camera head 16-PIN



1	V4
2	V3
3	H2
4	NC
5	$\bar{n}7.5V$
6	CCD OUT
7	GND
8	SUB
9	V1
10	NC
11	NC
12	V2
13	PG
14	H1
15	+15V
16	+5V



2	+15V
3	CCD OUT
4	$\bar{n}7.5V$
5	H2
6	V3
7	GND
8	DET($\bar{n}$)
9	NC
0	NC
1	V4
2	SUB
3	DET(+)
4	NC
5	NC
6	H1
7	V1
8	NC
9	PG
0	V2
	+5V