

NTSC

SONY
SURVEILLANCE
SYSTEMS

SSC-DC330/DC334

CCD Color Video Camera



SSC-DC330



SSC-DC334

ExwaveHAD™

Lens shown is optional.

SONY®

Sony introduces the SSC-DC330/DC334 1/3-inch CCD color cameras which incorporate Exwave HAD™ technology – a new technology developed by Sony that provides excellent sensitivity while greatly reducing smear levels. Exwave HAD together with other features including digital back light compensation provided by Smart Control® and increased video gain with Turbo AGC™ allow these cameras to reproduce clear, identifiable pictures in adverse or low light conditions. Furthermore, with a high resolution of 480 lines and accurate color reproduction provided by the ATWpro function, the SSC-DC330/DC334 color cameras are the ideal choice for many of today's CCTV applications.

With identical performance specifications, the two cameras offer different powering requirements. The SSC-DC334 operates on AC 24 V while the SSC-DC330 operates on DC 12 V and features triple multiplexing operation, with power and video/sync signals carried over a single coaxial cable.

The Difference is Exwave HAD

In monitoring and surveillance applications, camera sensitivity is one of the most important factors in obtaining an adequate picture in low light conditions. In addition to this requirement for high sensitivity, low smear levels are necessary, especially for surveillance of transportation and parking areas, where bright headlights of vehicles can be a problem. Because of the importance of these factors, Sony has developed Exwave HAD technology.

Sensitivity comparison between Exwave HAD camera and Hyper HAD camera:



Exwave HAD camera



Hyper HAD camera

Smear level comparison between Exwave HAD camera and Hyper HAD camera:



Exwave HAD camera



Hyper HAD camera

* The sensitivity and smear level comparison pictures were taken in identical lighting conditions with the same lens F stop and gain, resulting in relatively high smear levels.

Exwave HAD Technology - Higher Sensitivity, Lower Smear

Higher Sensitivity

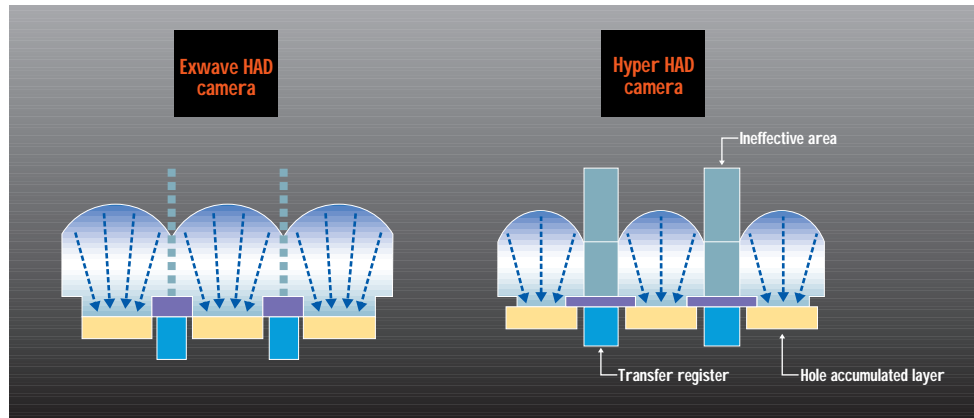
The sensitivity of the SSC-DC330/DC334 is well over twice that of the current Sony Hyper HAD® surveillance cameras. The conventional Sony Hyper HAD camera has an OCL (on chip lens) located over each pixel on the CCD. The result is that light is concentrated on the photosensor areas and the sensitivity of the camera is improved. The Exwave HAD takes the Hyper HAD technology a giant step further. The OCL of the Exwave HAD camera is a nearly gap-less structure, eliminating the ineffective areas between the microlenses. This enables the hole accumulation layer to receive the maximum amount of light.

Lower Smear

Smear is caused by the leakage of unwanted light on to the vertical shift register. The smear level of the Exwave HAD camera is reduced to 1/28th that of the Hyper HAD camera. This leakage is dramatically reduced

because the improvement of the unit cell structure minimizes the unnecessary reflection of the light onto the CCD surface.

CCD Structure



Excellent picture quality

With a high resolution of 480 TV lines and excellent sensitivity of 0.8 lx (F1.2, 50 IRE, TURBO AGC ON), these cameras capture high quality images even in extremely low light situations such as night-time surveillance. A further benefit of the Exwave HAD technology is that dark current noise is reduced to provide a very high signal-to-noise ratio of 50 dB.

Advanced Turbo AGC

The SSC-DC330/DC334 cameras are equipped with the new Turbo AGC (Auto Gain Control) function, which improves sensitivity more flexibly and effectively than conventional AGC by controlling the video gain over a range that is increased from 0-18 dB to 0-24 dB. Thus a subject under very low illumination can be distinguished more clearly.



Smart Control - Full Automatic Backlight Compensation (BLC)

Strong backlighting can often cause the subject of the picture to be cast into shadow. To overcome this problem, SSC-DC330/DC334 cameras have Smart Control which achieves the optimum balance between Iris and Gain settings in a unified digital signal processing circuit. As a result, clear color images can be obtained even under severe or varying lighting conditions.

Alternative White Balance Control Modes

The SSC-DC330/DC334 have two types of white balance control mode: ATWpro and ATW.

Advanced ATWpro mode

Ideal for frequently changing lighting conditions and applications where the operator needs to see objects as they appear to the eye. The effective

operational color range is 2500 K to 6000 K. This mode makes optimum use of the capabilities of the Smart Control function.

ATW mode

Allows the operator to see objects as they appear during daylight. The color temperature compensation range extends down to 2000 K and up to 10,000 K.

CCD IRIS® Function

As the illumination level of the scene changes, the camera responds by automatically reducing or increasing the exposure time of the photo sensors. This is achieved by changing the electronic shutter speed of the CCD, in the range of 1/60 of a second to 1/100,000 of a second. The CCD IRIS function is digitally controlled by the advanced Sony Smart Control feature. The control of incoming light by the CCD IRIS function is completely electronic and does not require a conventional mechanical iris control facility inside the camera. This means that reliability is greatly enhanced.

An added benefit of CCD IRIS function is when the information is recorded onto video tapes. For example, thanks to high shutter speeds during the

day, clear still images can be obtained when the tape is reviewed. This facilitates the identification of fast moving objects such as license plate numbers.

License plate of a moving car



CCD IRIS OFF— illegible numbers



CCD IRIS ON— legible numbers

Simple Single Cable Wiring (SSC-DC330 only)

The SSC-DC330 features optional Triple Multiplexing operation. Using a single coaxial cable, the video and sync signals can be transmitted together with DC power from an optional YS-W150/W250 Camera Adaptor. The SSC-DC330 can also be operated from a local DC 12 V power source using a commercially available power supply adaptor.

Other Features

Aperture/Sharp mode

VBS and VS lock

C/CS mount lens compatible

Video/DC servo type auto iris lens compatible

Optional Accessories: YS-W150/W250 Camera Adaptors

The YS-W150/W250 Camera Adaptors are designed to transmit power and video/sync signals between the adaptor and the camera, using a single coaxial cable. The YS-W150 is for use in a single

camera configuration while the YS-W250 is used in configurations of up to four cameras. Both units have two camera outputs for each camera input, allowing the camera picture to be monitored in two

locations. The YS-W150/W250 not only accept a VS sync signal but also feature AC line lock for external synchronization.



YS-W150



YS-W150 Rear Panel



YS-W250

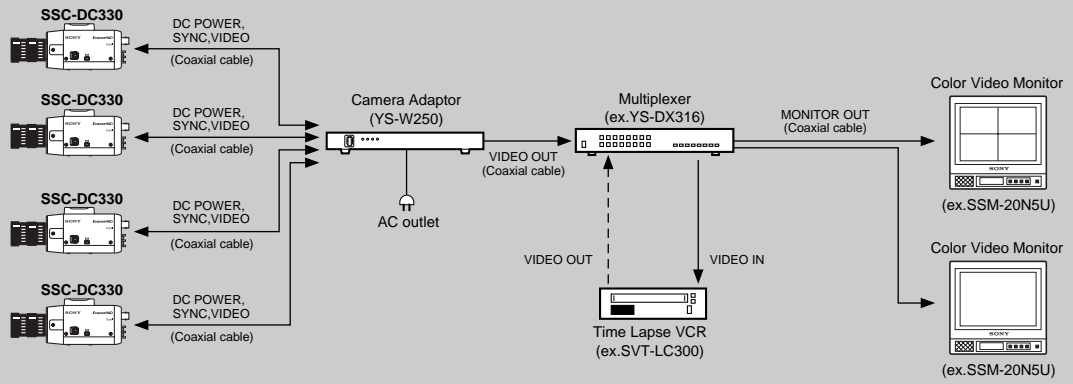


YS-W250 Rear Panel

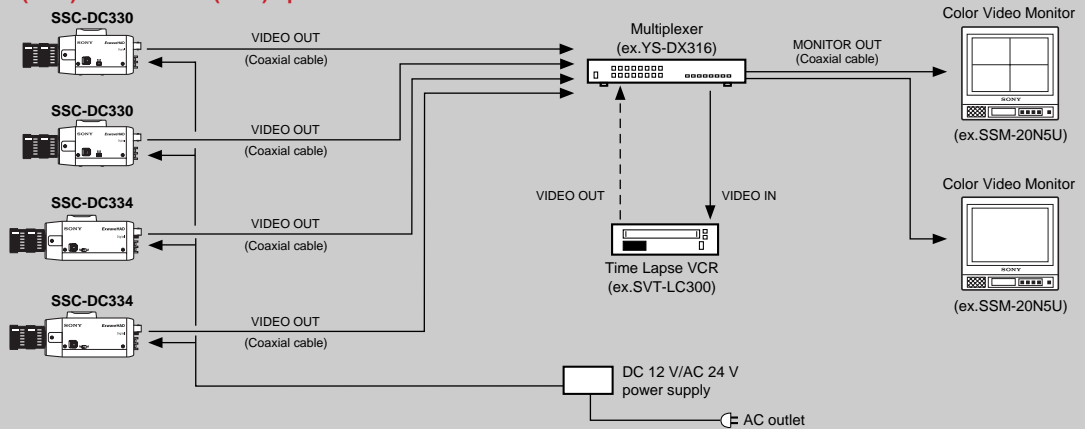
Typical System

Multiple camera operation

1. SSC-DC330 (Triple multiplexing operation)



2. SSC-DC330 (12 V) / SSC-DC334 (24 V) operation



Rear Panel

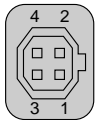
SSC-DC330

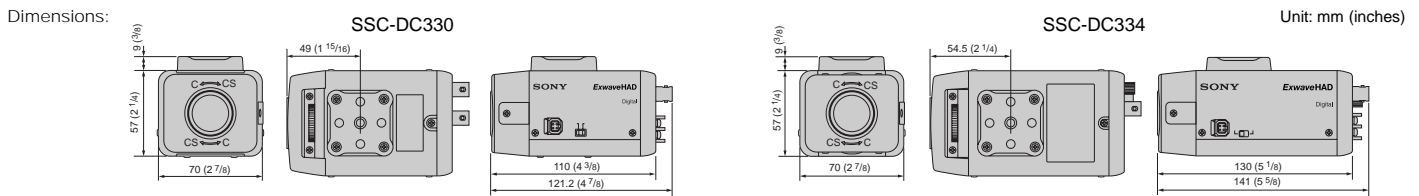


SSC-DC334



SSC-DC330/DC334 Specifications

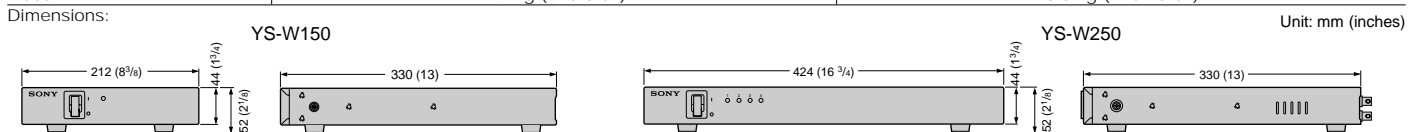
	SSC-DC330	SSC-DC334															
Image device:	1/3-inch Interline Transfer CCD																
Picture elements:	768 (H) x 494 (V)																
Sensing area:	3.3 x 4.4 mm (1/3-inch)																
Signal system:	NTSC standard																
Scanning system:	525 lines, 2:1 interlace																
Sync system:	Internal or external with VBS*/VS	Internal or external with AC line lock															
Phase control:	H phase adjustment ($\pm 0.25H$)	V phase adjustment ($\pm 90^\circ$)															
Horizontal resolution:	480 TV lines																
Lens mount:	C/CS mount adjustable																
Minimum illumination:	AGC ON (TURBO mode) 0.4 lx at F1.2 (30 IRE) 0.8 lx at F1.2 (50 IRE) 6.5 lx at F1.2 (100 IRE)																
Aperture control:	SHARP/NORMAL switchable																
Automatic gain control (AGC):	TURBO/NORMAL/OFF switchable																
CCD IRIS control:	ON/OFF switchable, 1/60 to 1/100000 s																
White balance:	ATWpro/ATW switchable																
Backlight compensation:	Smart Control																
Signal-to-noise ratio:	More than 50 dB (Weight ON, AGC OFF)																
Video out:	BNC: 1.0 Vp-p, 75 Ω , sync negative																
Operating temperature:	-10 to 50°C (14 to 122°F)																
Storage temperature:	-40 to 60°C (-40 to 140°F)																
Power requirements:	1) Multiplexing with YS-W150/W250 2) DC 12 V from DC 12 V power supply	AC 24 V, 60 Hz															
Power consumption:	1) 5.0 W supplied from YS-W150/W250 2) 3.0 W at DC 12 V	4.5 W															
Mass:	430 g (15 oz)	550 g (1 lb 3 oz)															
Auto iris type:	DC/VIDEO servo type																
Connectors:	DC 12 V terminals Mode A (Triple multiplexing operation): DC IN/VS IN/VIDEO OUT (BNC), MONITOR OUT (BNC), Mode B (DC 12 V operation): VIDEO OUT (BNC), VS IN (BNC) LENS (4-pin)	AC 24 V terminals, VIDEO OUT (BNC), GND															
	 <table border="1"> <thead> <tr> <th>Pin</th> <th>DC servo</th> <th>VIDEO servo</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Control (-)</td> <td>Power (DC 9 V, 50 mA)</td> </tr> <tr> <td>2</td> <td>Control (+)</td> <td>Not connected</td> </tr> <tr> <td>3</td> <td>Drive (+)</td> <td>Video</td> </tr> <tr> <td>4</td> <td>Drive (-) (GND)</td> <td>GND</td> </tr> </tbody> </table>	Pin	DC servo	VIDEO servo	1	Control (-)	Power (DC 9 V, 50 mA)	2	Control (+)	Not connected	3	Drive (+)	Video	4	Drive (-) (GND)	GND	
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YS-W150/W250 Specifications

* The burst signal is not locked

Power requirements:	AC 120 V, 60 Hz	
Power consumption:	15 W	48 W
Operating temperature:	-10°C to 50°C (14°F to 122°F)	
Input connectors:	CAMERA IN (BNC), SYNC IN (BNC)	CAMERA IN 1 to 4 (BNC x 4), SYNC IN (BNC)
Output connectors:	VIDEO OUT (BNC x 2), SYNC OUT (BNC, Loop-through, 75 Ω ON/OFF)	VIDEO OUT A: 1 to 4 (BNC x 4), VIDEO OUT B: 1 to 4 (BNC x 4) SYNC OUT (BNC, Loop-through, 75 Ω ON/OFF)
Synchronization:	Internal or external with VS or AC line lock	
Maximum cable length:	300 m (984 ft) using RG-59B/U (3C-2V) 500 m (1640 ft) using RG-6A/U (5C-2V) 600 m (1968 ft) using RG-11A/U (7C-2V)	
Cable compensation:	3 steps (100/200/300 m)	
Mass:	1.9 kg (4 lb 3 oz)	3.6 kg (7 lb 15 oz)



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SSC-DC330



SSC-DC334

