CCIR

SONY SURVEILLANCE SYSTEMS

SPT-M320CE/M324CE/M328CE

CCD Black & White Cameras

Lens shown is optional.

In 1998, Sony achieved a major advance in camera sensitivity with the introduction of the Sony Exwave HAD™ technology. This advanced technology brings powerful benefits to security and surveillance applications and is used in the new Sony SPT-M320CE, SPT-M324CE and SPT-M328CE 1/3-inch CCD black and white Exwave HAD cameras. These cameras have near-infrared wavelength sensitivity because of the extended spectral response of the Exwave HAD technology. With identical performance specifications, these three new models differ only in their method of powering. The SPT-M320CE operates on DC 12 V, the SPT-M324CE on AC 24 V, and the SPT-M328CE on AC 220-240 V. The SPT-M320CE also features Triple Multiplexing operation, with power and video/sync signals carried over a single coaxial cable.

SONY®

Exwave HAD™ - Higher Sensitivity, Lower Smear

The Difference is Exwave HAD

In monitoring and surveillance applications, camera sensitivity is a vital factor 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 the bright headlights of vehicles can be a problem. Because of the importance of these factors, Sony has developed the Exwave HAD technology.

Higher Sensitivity

The sensitivity of the SPT-M320CE, SPT-M324CE and the SPT-M328CE is well over three times that of the current Sony SPT-M304CE and SPT-M308CE surveillance cameras. The conventional Sony Hyper HAD® structure 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 accumulated layer to receive the maximum amount of light (See Fig. 1). The SPT-M320CE, SPT-M324CE and the SPT-M328CE can also be used as near-infrared cameras when used with an infrared illuminator. This is because the Exwave HAD enhances the sensitivity at near-infrared wavelengths.

Lower Smear

Smear is caused by the leakage of unwanted light on to the vertical shift register of a CCD. The smear level of the Exwave HAD camera is reduced to 1/50th that of the Hyper HAD camera. This dramatic reduction is achieved by improvements in cell structure which minimise unwanted reflection of light onto the CCD surface.

CCD Structure

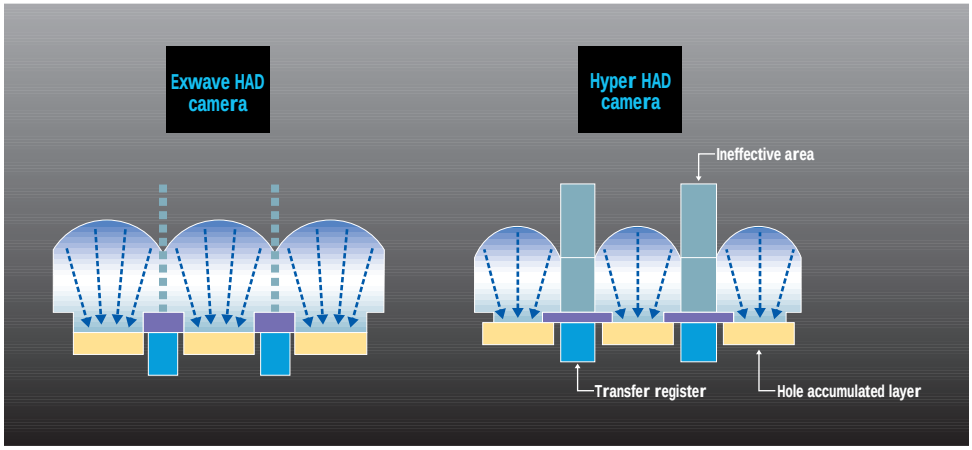


Fig. 1

Sensitivity comparison between SPT-M324CE and SPT-M304CE:

SPT-M324CE

SPT-M304CE

SPT-M324CE (with infrared illuminator)

SPT-M304CE (with infrared illuminator)

Smear level comparison between SPT-M324CE and SPT-M304CE:

SPT-M324CE

SPT-M304CE

Features

Superior Picture Quality

These new cameras incorporate a 1/3-inch IT (Interline Transfer) HAD CCD with more than 440,000 effective picture elements and a horizontal resolution of 570 TV lines. Sony Exwave HAD technology allows very high sensitivity with a minimum illumination of 0.07 lx at F1.2 (50 IRE, Turbo AGC™ mode), producing clear, crisp images.

CCD IRIS® Function

This function allows the use of a manual iris lens instead of a more costly automatic iris lens. As the illumination level of the scene changes, the camera responds by automatically reducing or increasing the exposure time of the photosensors. This is achieved by changing the electronic shutter speed of the CCD over a range of 1/50 of a second to 1/100,000 of a second.

Flexible Choice of Auto Iris Lens

An auto iris lens is often ideal for shooting in environments where there are large variations in illumination levels. These cameras accept both DC servo and video servo auto iris lenses. The auto iris lens 4-pin connector is conveniently located on the side of the camera.

Backlight Compensation Function

Strong backlight can often cause the subject of the picture to be cast into shadow. The Backlight Compensation (BLC) function helps to overcome this problem by automatically adjusting the picture brightness to allow for changes in lighting conditions. The contrast ratio is adjusted with the BLC function, while the amount of overall picture brightness is adjustable with the level control.

Simple Single Cable Wiring and AC Line Lock Capability

The three models vary only in the way they are powered. The SPT-M320CE features optional Triple Multiplexing operation. Using a single coaxial cable, the video and sync signals are transmitted together with DC power from an optional YS-W150P/W250P Camera Adaptor. The SPT-M320CE can also be operated from a local DC 12 V power source using a commercially available power supply adaptor.

The SPT-M324CE and SPT-328CE models feature an external sync capability utilising AC line lock. This makes camera installation and synchronisation easy for both new and existing camera systems.

Low Power Consumption

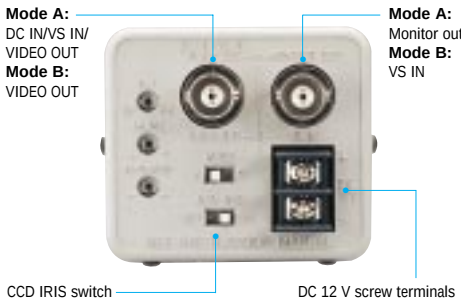
These three cameras have significantly lower power consumption than earlier models:

Model	Power Source	Power Consumption
SPT-M320CE	DC 12 V	2.4 W
SPT-M320CE	Multiplexing from YS-W150P/250P	2.8 W
SPT-M324CE	AC 24 V	2.6 W
SPT-M328CE	AC 220-240 V	3.8 W

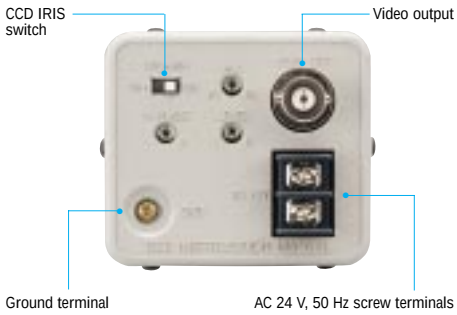
C/CS-mount Lens Compatibility

SPT-M320CE , SPT-M324CE and the SPT-M328CE cameras can all use C-mount or CS-mount lenses, and precise back-focus adjustment is easy to achieve. This broadens your choice of lenses.

SPT-M320CE Rear



SPT-M324CE Rear



SPT-M328CE Rear

Optional Accessories

YS-W150P Camera Adaptor (for use with the SPT-M320CE)

- for single camera configurations
- operates on AC 220-240 V, 50 Hz
- 15 W power consumption
- 218 (W) x 52 (H) x 330 (D) mm (8 3/8 x 2 1/8 x 13 inches)
- up to 300 m (984 ft) transmission w/ RG-59B/U (3C-2V) cable
- up to 500 m (1640 ft) transmission w/ RG-6A/U (5C-2V) cable
- up to 600 m (1968 ft) transmission w/ RG-11A/U (7C-2V) cable

YS-W150P

YS-W250P Camera Adaptor (for use with the SPT-M320CE)

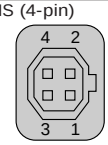
- for configurations of up to four cameras
- operates on AC 220-240 V, 50 Hz
- 48 W power consumption
- 424 (W) x 52 (H) x 330 (D) mm (16 3/4 x 2 1/8 x 13 inches)
- up to 300 m (984 ft) transmission w/ RG-59B/U (3C-2V) cable
- up to 500 m (1640 ft) transmission w/ RG-6A/U (5C-2V) cable
- up to 600 m (1968 ft) transmission w/ RG-11A/U (7C-2V) cable

YS-W250P

Specifications

	SPT-M320CE	SPT-M324CE	SPT-M328CE
Image device:	1/3-inch Interline Transfer CCD		
Picture elements:	752 (H) x 582 (V)		
Sensing area:	4.8 x 3.6 mm		
Signal system:	CCIR		
Sync system:	Internal or external with VS or MPX-VS	External with AC line lock	
Phase control:	H-phase adjustment (±1.2H)	V-phase adjustment (±90°)	
Horizontal resolution:	570 TV lines		
Lens mount:	C/CS-mount adjustable		
Minimum illumination:	At F1.2, AGC ON 0.04 lx at 30 IRE 0.07 lx at 50 IRE 0.3 lx at 100 IRE		
Automatic Gain Control:	Turbo AGC permanently ON		
CCD IRIS control:	ON/OFF switchable, 1/50 s to 1/100,000 s		
Backlight compensation:	Adjustable		
Signal-to-noise ratio:	More than 50 dB (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:	Multiplexing with YS- W150P/250P or DC 12 V	AC 24 V, 50 Hz	AC 220-240 V, 50 Hz
Power consumption:	2.8 W supplied from YS-W150P/250P 2.4 W at DC 12 V	2.6 W	3.8 W
Mass:	410 g (14 oz)	340 g (12 oz)	770 g (1 lb 11 oz)
Auto iris type:	DC/VIDEO servo type		
Connectors:	DC 12 V terminals Mode A: DC IN/VS IN/VIDEO OUT (BNC), MONITOR OUT (BNC) Mode B: VIDEO OUT (BNC), VS IN (BNC)	AC 24 V terminals, VIDEO OUT (BNC), GND	VIDEO OUT (BNC)

LENS (4-pin)



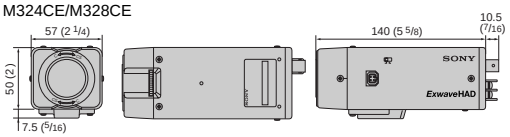
Pin	DC servo	VIDEO servo
1	Control (-)	Power (DC 9 V, 50 mA)
2	Control (+)	Not connected
3	Drive (+)	Video (0.7 V p-p)
4	Drive (-) (GND)	(GND)

Supplied accessories:	Lens connector, lens mount cap, Operating instruction manual

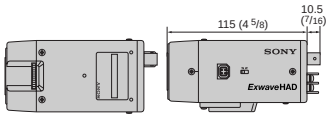
Dimensions: Unit: mm (inches)

SPT-M320CE/ M324CE/M328CE

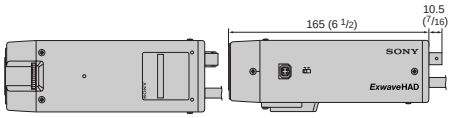
SPT-M320CE



SPT-M324CE

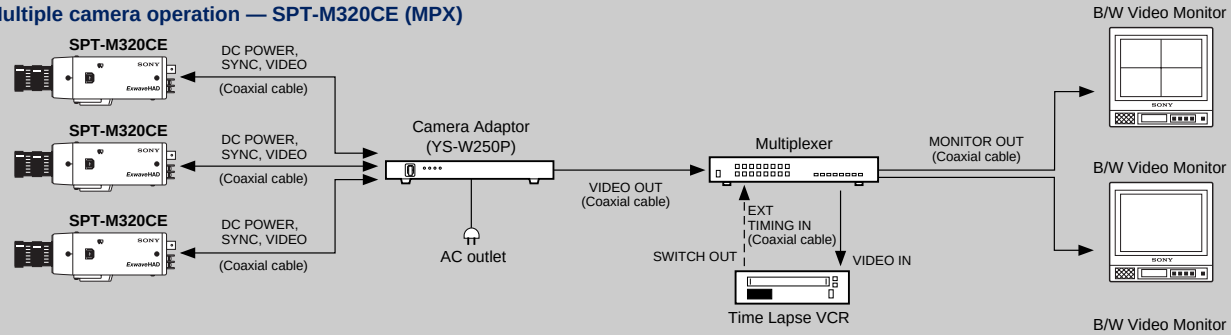


SPT-M328CE

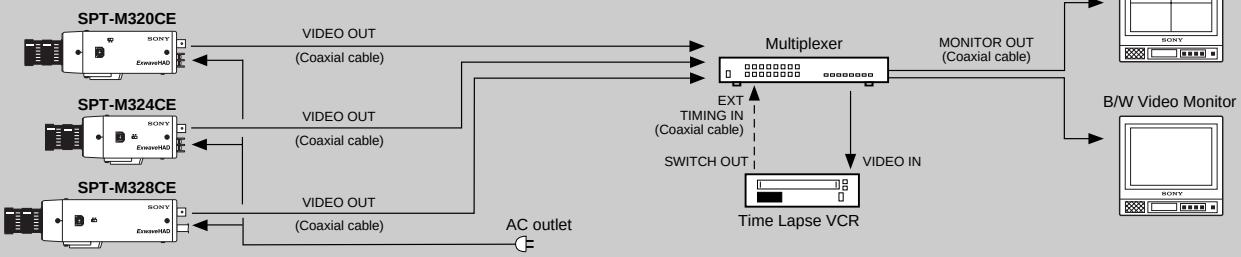


System Connections:

1. Multiple camera operation — SPT-M320CE (MPX)



2. Multiple camera operation — SPT-M320CE (DC 12 V), SPT-M324CE (AC 24 V), SPT-M328CE (AC 220-240 V)



*The SPT-M328CE operates from 220-240 V AC, the SPT-324CE from 24 V AC and the SPT-320CE from 12 V DC.

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