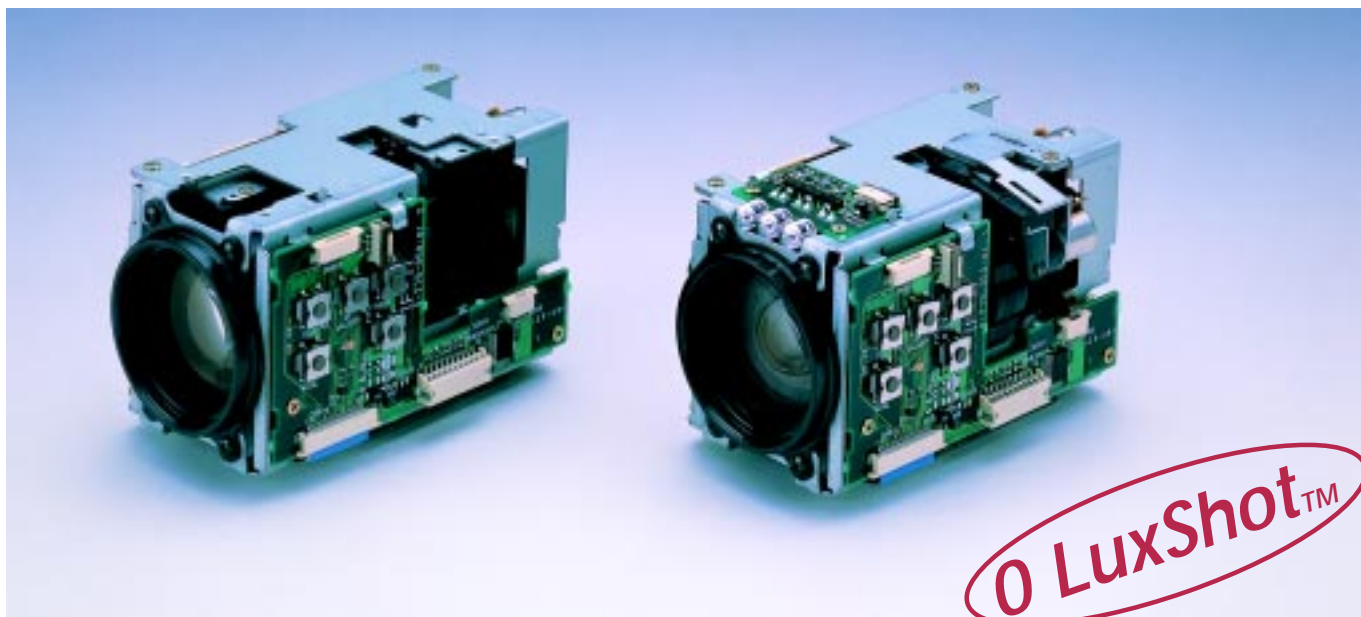


SONY

COLOR CAMERA MODULE

FCB-IX47/IX47P FCB-IX470/IX470P

Component/OEM



OUTLINE

The FCB-IX47/IX470 is a color camera module which incorporates a 18× zoom lens and a 1/4" Super HAD CCD™. In regards to signal processing, the FCB-IX47/IX470 adopts a newly developed DSP which allows the creation of various "Picture Effects" and "Digital Effects". Also with built-in field memory, slower shutter speeds can be achieved.

The FCB-IX470/IX470P comes equipped with a removable IR cut filter and built-in IR LED which produces minimum sensitivity in "0 lx".

The FCB-IX47/IX470 also has a preset function, which can save or load camera control functions. Many control functions of the FCB-IX47/IX470 can be controlled via the VISCA™/RS-232C.

- 0 lx (FCB-IX470/IX470P)
- 72× Zoom (Optical 18×, Digital 4×)
- Field Memory

HIGHLIGHTS

- 0 lx (FCB-IX470/IX470P only)
- Newly Developed DSP
- Super HAD CCD™
- 18× AF Zoom Lens
- 4× Digital Zoom
- Field Memory
- Slow Speed Shutter
- Back Light compensation
- Speed Adjustment for Zoom and Focus
- VISCA™/RS-232C Control (9600bps)
- Mirror Image
- Negative/Positive Reversal
- Preset
- Camera ID
- On Screen Data/Day and Time
- Monochrome Image Out

* "0 LuxShot™" is a trademark of Sony Corporation.

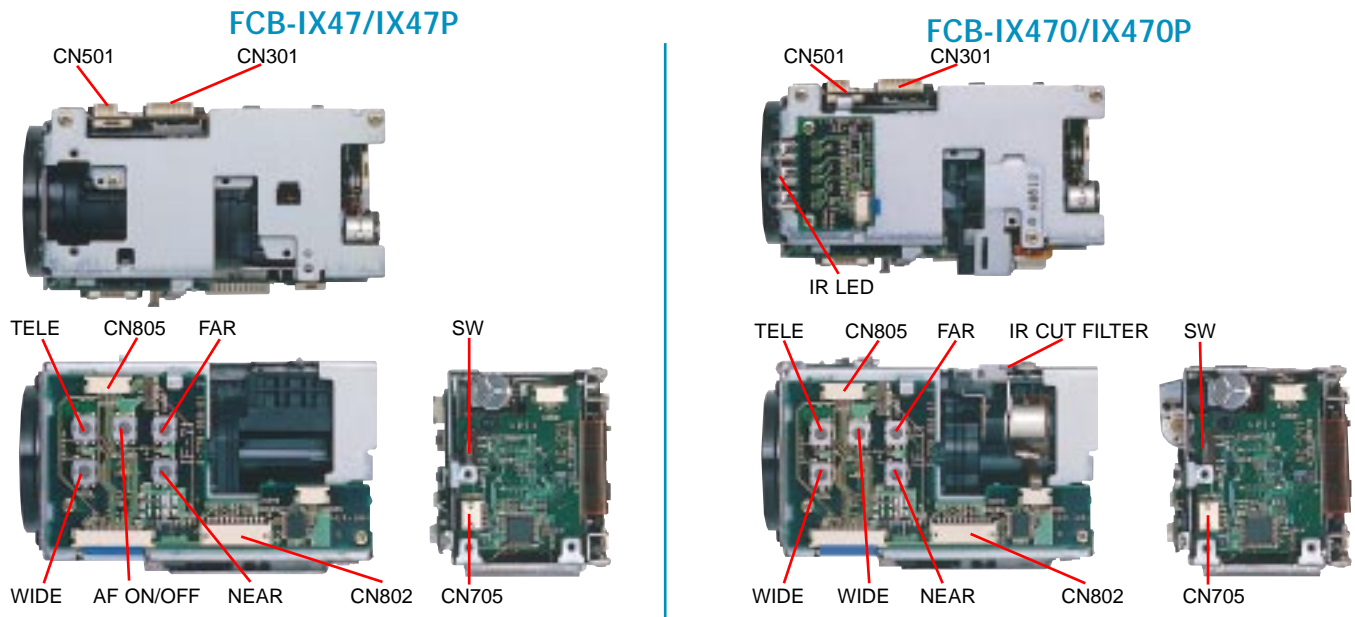
* "Super HAD CCD™" is a trademark of Sony Corporation.

* "VISCA" is an acronym of Video System Control Architecture. It is a network protocol designed to interface a wide variety of equipment to computer.

"VISCA™" is a trademark of Sony Corporation.

CAMERA CONTROL

- When the FCB-IX47/470 is not being controlled by RS-232C, zoom and focus can be adjusted manually on the camera. The red LED indicates AF mode.



Pin Assignment

CN501(Power)

1	DC IN(6~12V)
2	GND

CN301(Video Out)

1	GND
2	C OUT
3	GND
4	Y OUT
5	GND
6	VBS OUT

SW(Memory Backup)

INT	Internal Battery
OFF	No Battery-up
EXT	External Battery(3Vdc)

CN705(Backup)

1	BATT IN (3V)
2	GND
3	NC

CN802 RS-232C

1	TXD IN
2	DTR IN
3	DSR IN
4	RXD IN
5	TXD OUT
6	DTR OUT
7	DSR OUT
8	RXD OUT
9	GND
10	NC

CN805(External Control)

1	GND
2	GND
3	KEY AD0
4	KEY AD1
5	KEY AD2
6	KEY AD3
7	KEY AD4
8	KEY AD5
9	KEY AD6
10	AF ON LED
11	DIGITAL ZOOM POS
12	OPTICAL ZOOM POS

- Please refer to the "RS-232C Command List" when controlling the camera via RS-232C. The following functions can be selected and adjusted.

Zoom	:	Zoom Control 16384 steps
Zoom Speed	:	Zoom Speed Control 8 steps
Digital Zoom	:	Digital Zoom Control 12288 steps
Focus	:	Focus Control(AF, Manual, One Push) 45056 steps
Focus Speed	:	Focus Speed Control 8 steps
AE Mode	:	Auto Exposure Mode 9 modes
WB Mode	:	White Balance Mode 6 modes
Aperture	:	Aperture Control 16 steps
Back Light	:	Back Light Compensation
Zero Lux Shot	:	IR Cut Filter ON/OFF (FCB-IX470/IX470P only)
IR Light	:	IR LED ON/OFF (FCB-IX470/IX470P only)
LR Reverse	:	Mirror Image
Freeze	:	Still Image on Field Memory
Memory	:	Preset 6 sets
Display	:	On Screen Data/Day and or Time ON/OFF
Key Lock	:	Key Lock ON/OFF
ID Write	:	Camera ID (0 to 65535)
Power	:	Camera Power ON/OFF

The "RS-232C Command List" and demonstration software for Windows® 95 and Windows® NT4.0 are available upon request. The software is available for evaluation and/or demonstration only. Use of the software with customer developed application software may damage hardware, application program and the camera. Sony Corporation is not liable for any damages under these condition.

* Microsoft®, Windows® are trademarks of Microsoft Corporation.

Picture Effect

Pastel	: Pastel Image
Neg.Art	: Negative/Positive Reversal
Sepia	: Sepia Image
Black White	: Monochrome Image
Solarize	: Enhanced Contrast
Mosaic	: Mosaic Image
Slim	: Vertical Stretch
Stretch	: Horizontal Stretch

Digital Effect

Still	: Motion Image on Still Image
Flash	: Continuous Still Image
Lumi	: Motion Images on Binaried Still Image
Traie	: Afterimage Lag of Motion Object

AE MODE

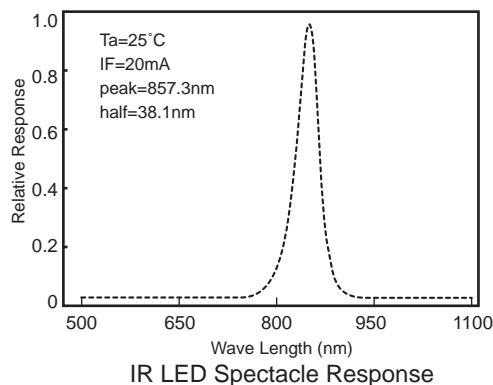
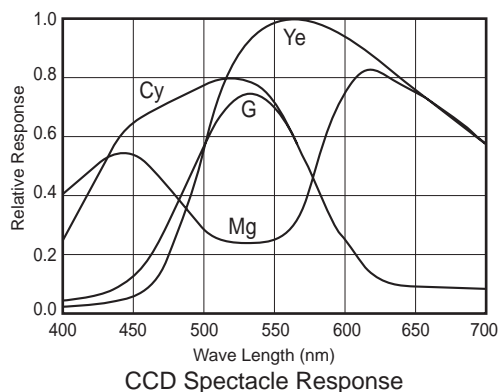
Full Auto	: Auto Iris and Gain, Fixed Shutter
Shutter Priority	: Variable Shutter Speed (1/4 or 1/3 to 1/10000sec., 20 steps, std. shutter 16 steps, slow shutter 4 steps) Auto Iris and Gain
Iris Priority	: Variable Iris (F1.4 to Close, 18 steps), Auto Gain and Shutter
Gain Priority	: Variable Gain (-3dB to 18dB, 8 steps), Auto Iris and Fixed Shutter
Manual	: Variable Shutter, Iris and Gain
Bright	: Variable Iris and Gain (Closed to F1.6, 17 steps at 0dB; F1.4, 7 steps from 0 to 18dB)
Shutter Auto	: Variable Iris and Gain
Iris Auto	: Variable Gain and Shutter
Gain Auto	: Variable Iris and Shutter
Exposure Comp	: Gain Compensation (-10.5 to +10.5dB, 15 steps at 1.5dB)

WB MODE

Auto	: Avoid fixing "white" with single color scenes by limiters of R and B gain (3200 to 6000°k)
ATW	: Auto Tracing White Balance (2000 to 10000°k)
Indoor	: 3200°k
Outdoor	: 5600°k
One Push WB	: One Push White Balance
Manual WB	: Manual Control of R and B gain, 256 steps

0 LuxShot

The FCB-IX470/IX470P is equipped with a mechanism which moves the IR cut filter. When the IR cut filter OFF and light on supplied IR LED, the FCB-IX470/IX470P realize "0 lx" as a minimum sensitivity. Standard "0 lx" images show slight green. This comes from the image of Image Intensifier. When "Black White" on "Picture Effect" is selected, the FCB-IX470/IX470P generates monochrome video images.



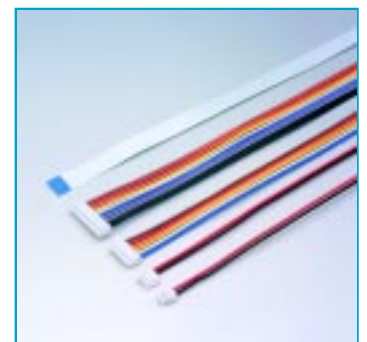
The supplied IR LED has a limited energy range allowing a working distance of approximately 2 to 3 meters.

OTHERS

Supplied Accessories

There are five cables in the unit carton.

Type of connectors	: JST	
CN501 (Power)	: Camera side S2B-ZR-SM3A-TF	Cable side housing ZHR-2
CN705 (Ext. Battery)	: Camera side S3B-ZR-SM3A-TF	Cable side housing ZHR-3
CN301 (Video)	: Camera side S6B-ZR-SM3A-TF	Cable side housing ZHR-6
CN801 (RS-232C)	: Camera side S10B-ZR-SM3A-TF	Cable side housing ZHR-10
	All receptacles are SZH-003T-P0.5	
Type of connector	: Molex	
CN805 (External Control)	: Camera side 52689-1240	FCC (0.5mm pitch)



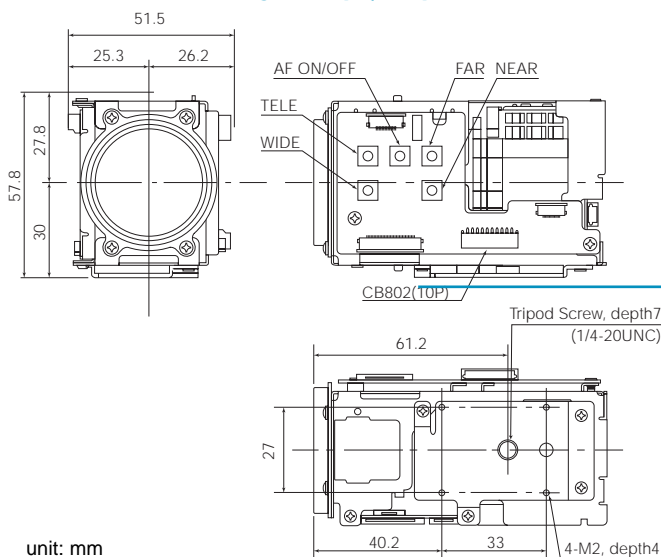
Optional Accessory

The FCB-IX47/IX470 comes with $\varnothing 37\text{mm}$ P=0.75mm filter screw in the front of the zoom lens. Optional conversion lens is available as a consumer product item.

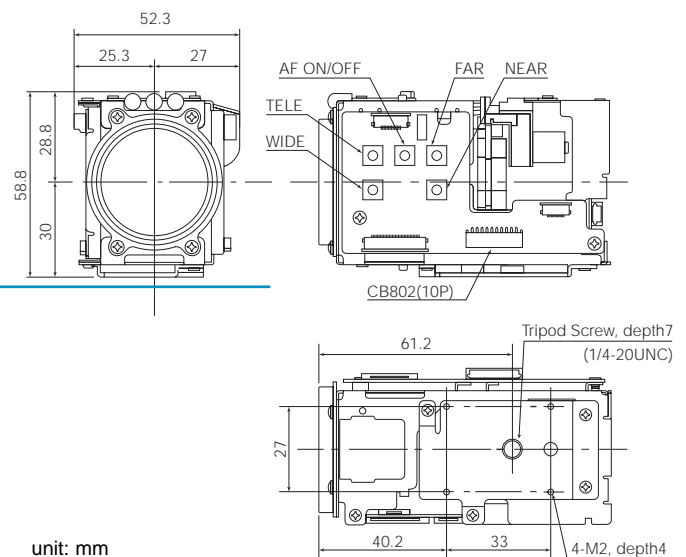
SPECIFICATION

	FCB-IX47	FCB-IX470	FCB-IX47P	FCB-IX470P
Image Sensor	1/4" Super HAD CCD™			
Picture Elements	768(H) × 494(V)		752(H) × 582(V)	
H. Resolution	more than 470TVL		more than 460TVL	
Lens	18× Zoom f=4.1 to 73.8mm (F1.4 to F3.0)			
Digital Zoom	4× (72× with optical zoom)			
Angle of View (H)	approx. 48° (wide end)		approx. 2.7° (tele end)	
Min. Working Distance	10mm (wide end)		800mm (tele end)	
Sync System	Internal			
Min. Sensitivity	3 lx (F1.4)	0 lx (F1.4) IR CUT OFF IR LED-ON	0.2 lx (F1.4) IR CUT OFF IR LED-OFF	3 lx (F1.4) 0 lx (F1.4) IR CUT OFF IR LED-ON
S/N Ratio	more than 50dB			
Back Light Compensation	ON/OFF			
Electronic Shutter	1/4 to 1/10000sec., 20 steps		— 1/3 to 1/10000sec., 20 steps	
White Balance	Auto, ATW, Indoor, Outdoor, One Push WB, Manual WB			
Gain	Auto/Manual (-3 to 18dB, 8 steps)			
Aperture	16 steps			
Preset	6 positions			
Battery Back-up	approx. 6 months (fully charged)			
Video Output	VBS:1.0Vp-p (Sync Negative) and Y/C			
Storage Temp./Humidity	-20 to 60°C/20 to 95%			
Operating Temp./Humidity	0 to +50°C/20 to 80%			
Power	6 to 12Vdc/2.8W (active motors), 4.2W (active motors and IR LED ON)			
Weight	205g	220g	205g	220g
Dimensions (W x H x D)(mm)	51.2 × 57.8 × 92.4	52.3 × 58.8 × 92.4	51.2 × 57.8 × 92.4	52.3 × 58.8 × 92.4

FCB-IX47/IX47P



FCB-IX470/IX470P



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