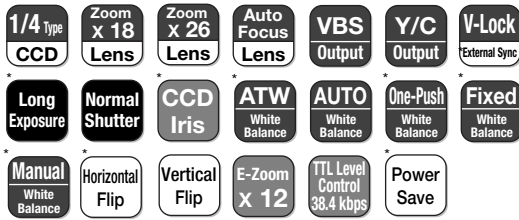


# FCB-EX980S/EX980SP FCB-EX980/EX980P FCB-EX480C/EX480CP FCB-EX48C/EX48CP



Optical x18 zoom: FCB-EX480C/EX480CP, FCB-EX48C/EX48CP  
Optical x26 zoom: FCB-EX980S/EX980SP, FCB-EX980/EX980P

\* For TTL control



FCB-EX980S/EX980SP  
FCB-EX980/EX980P

## Outline

Sony's new FCB-EX series of color block cameras are equipped with an incredible high 26x zoom lens with a wide/ telephoto horizontal field of view. These cameras incorporate an advanced spherical privacy zone masking feature which allows masking areas to be interlocked with the camera's Pan/Tilt/Zoom movements regardless of the camera angle to protect the privacy of individuals. In addition, the FCB-EX Series also incorporates high performance Digital Signal Processing (DSP) that provides for enhanced picture quality and operability compared to conventional block cameras. The FCB-EX980S series combines a 1/4-type Super HAD CCD™ with Sony's new powerful 26x zoom "SMART" lens with an incredibly high telephoto zoom capability and image stabilizer function, allowing users to zoom in on small or distant objects with exceptional clarity and stability. The FCB-EX980 series combines a high-sensitivity 1/4-type EXview HAD CCD™ and Sony's new powerful 26x zoom "SMART" lens with a wide horizontal field of view.

## Features

- <FCB-EX980S/EX980SP><FCB-EX980/EX980P>
- 1/4-type Super HAD CCD™ (FCB-EX980S/EX980SP)
  - 1/4-type EXview HAD CCD™ (FCB-EX980/EX980P)
  - 312x Zoom Ratio (26x optical, 12x digital)
  - Advanced Spherical Privacy Zone Masking Function
  - Image Stabilizer Function (FCB-EX980S/EX980SP)
  - Minimum illumination of 1.0 lx (typical) (FCB-EX980/EX980P)
  - E-Flip Function
  - Alarm Function
  - Spot AE
  - Auto ICR (IR Cut-filter Removal) Mode
  - Picture Freeze Function
  - Key Switch Connector (CN601) for Camera Control with External Equipment
  - Electronic Shutter/Slow Shutter
  - High-Speed Serial Interface (maximum 38.4 Kb/s) with TTL Signal-Level Control (VISCA protocol)
  - Internal/External Sync

### <FCB-EX480C/EX480CP>

- 1/4-type EXview HAD CCD™
- Minimum illumination of 0.7 lx (typical)
- 216x Zoom Ratio (18x optical, 12x digital)
- Advanced Spherical Privacy Zone Masking Function
- E-Flip Function
- Alarm Function
- Spot AE
- Auto ICR (IR Cut-Filter Removal) Mode
- Picture Freeze Function
- Key Switch Connector (CN601) for Camera Control with External Equipment
- Electronic Shutter/Slow Shutter
- High-Speed Serial Interface (maximum 38.4 Kb/s) with TTL Signal-Level Control (VISCA protocol)
- Internal/External Sync

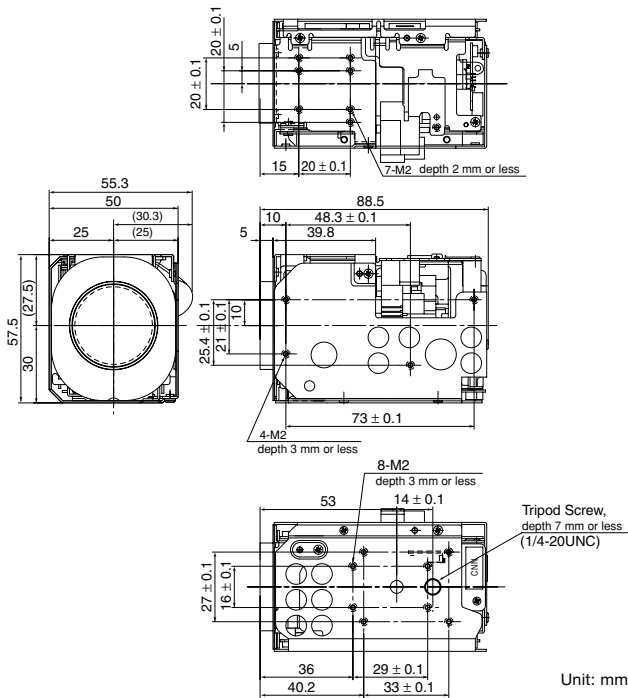
### <FCB-EX48C/EX48CP>

- 1/4-type EXview HAD CCD™
- Minimum illumination of 0.7 lx (typical)
- 216x Zoom Ratio (18x optical, 12x digital)
- Advanced Spherical Privacy Zone Masking Function
- E-Flip Function
- Alarm Function
- Spot AE
- Picture Freeze Function
- Key Switch Connector (CN601) for Camera Control with External Equipment
- Electronic Shutter/Slow Shutter
- High-Speed Serial Interface (maximum 38.4 Kb/s) with TTL Signal-Level Control (VISCA protocol)
- Internal/External Sync

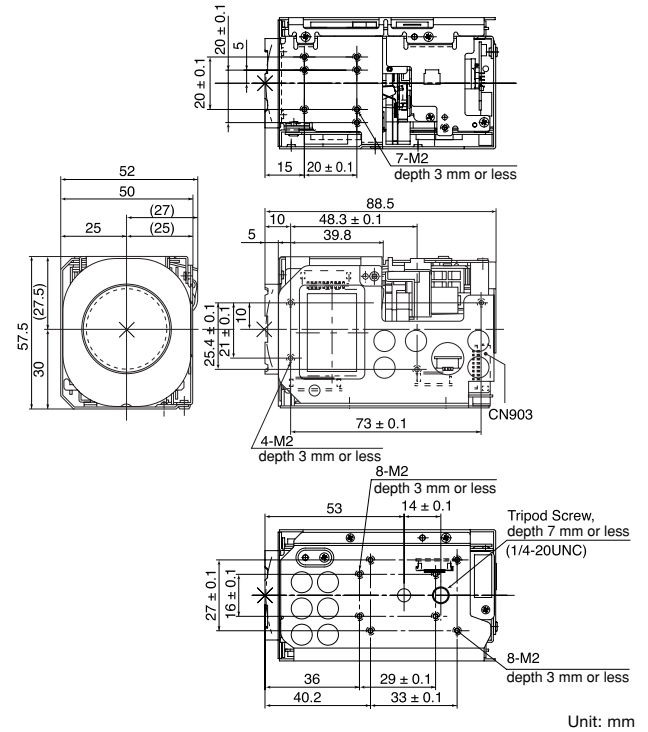
\* Exview HAD CCD, Super HAD CCD and VISCA are trademarks of Sony Corporation.

# Dimensions

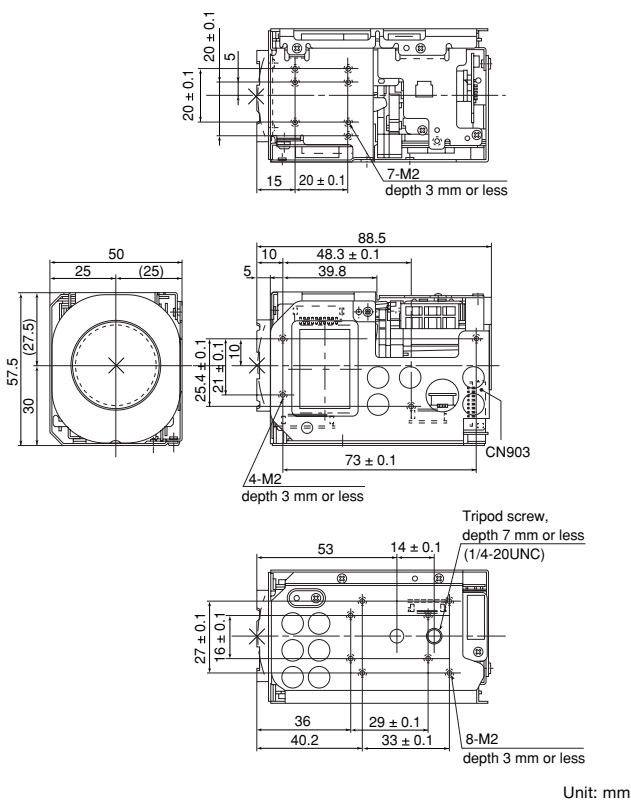
## <FCB-EX980S/EX980SP> <FCB-EX980/EX980P>



## <FCB-EX480C/EX480CP>



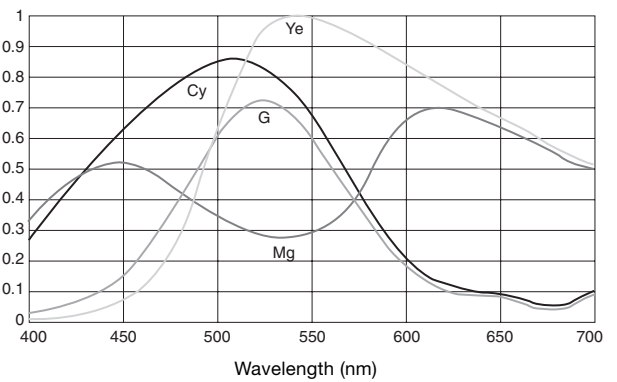
## <FCB-EX48C/EX48CP>



## Spectral Sensitivity Characteristics

### ●FCB-EX980S/EX980SP (Typical Values)

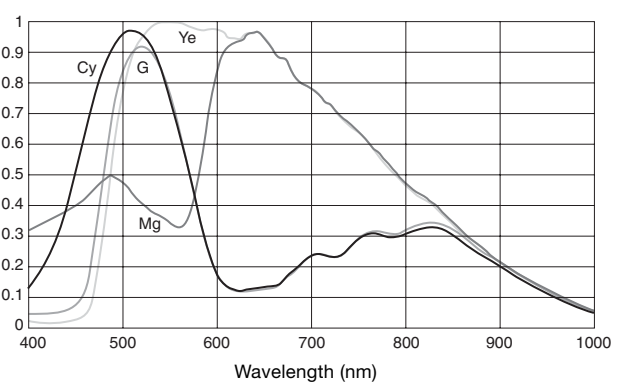
Relative sensitivity



### ●FCB-EX980/EX980P/FCB-EX480C/EX480CP/ EX48C/EX48CP

(Typical Values)

Relative sensitivity



## Specifications

	FCB-EX980S	FCB-EX980SP	FCB-EX980	FCB-EX980P
Image device	1/4 type Super HAD			
Signal output	NTSC	PAL	NTSC	PAL
Video output	VBS: 1.0 Vp-p (sync negative), Y/C Output			
Effective picture elements	Approx. 680,000 pixels	Approx. 800,000 pixels	Approx. 380,000 pixels	Approx. 440,000 pixels
Lens	26x optical zoom, f=3.5 mm (wide) to 91.0 mm (tele), F1.6 to F3.8			
Digital zoom	12x (312x with optical zoom)			
Viewing angle (H)	42.2° (wide end) to 1.6° (tele end)		54.2° (wide end) to 2.2° (tele end)	
Minimum working distance	35 mm (wide end) to 800 mm (tele end)			
Sync system	Internal/External (V-Lock)			
Minimum illumination	2.0 lx (typical) (F1.6, 50 IRE)		1.0 lx (typical) (F1.6, 50 IRE)	
S/N ratio	More than 50 dB			
Electronic shutter	1/1 to 1/10,000 s, 22 steps			
White balance	Auto, ATW, Indoor, Outdoor, One-push, Manual			
Gain	Auto/Manual (-3 to 28 dB, 2 dB steps)			
Camera control interface	VISCA (TTL signal level), baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, Stop bit: 1/2 selectable			
Storage temp./humidity	-20 to 60 °C / 20 to 95 %			
Operating temp./humidity	0 to +50 °C / 20 to 80 %			
Power consumption	6 to 12 V DC/1.6 W (motors inactive), 3.3 W (motors active)			
Mass	230 g			
Dimensions (W x H x D)	55.3 x 57.5 x 88.5 mm			

## Functions

	FCB-EX980S	FCB-EX980SP	FCB-EX980	FCB-EX980P
Privacy zone masking			○ (Spherical)	
Auto ICR Mode			○	
E-Flip Function			○	
Mirror Image			○	
Alarm function			○	
Focus system	Auto (Sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF			
Spot AE	Auto, Manual, Priority mode, Bright, EV compensation, Back-light compensation			
EV compensation	10.5 to +10.5 dB (1.5 dB steps)			
Outline compensation (Aperture)	16 steps			
Back-light compensation	○			
Picture effect	E-Flip, Nega Art, Black&White, Mirror Image			

## Specifications

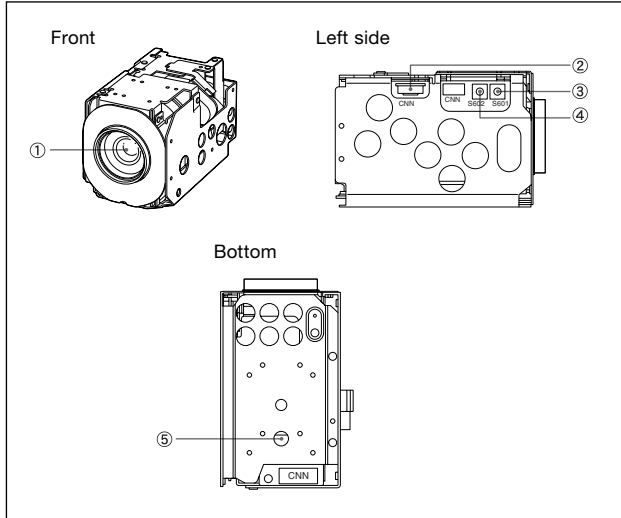
	FCB-EX480C	FCB-EX480CP	FCB-EX48C	FCB-EX48CP
Image device	1/4-type EXview HAD CCD			
Signal output	NTSC	PAL	NTSC	PAL
Video output	VBS: 1.0 Vp-p (sync negative), Y/C Output			
Effective picture elements	Approx. 380,000 pixels	Approx. 440,000 pixels	Approx. 380,000 pixels	Approx. 440,000 pixels
Lens	18x optical zoom, f=4.1 mm (wide) to 73.8 mm (tele), F1.4 to F3.0			
Digital zoom	12x (216x with optical zoom)			
Viewing angle (H)	48.0° (wide end) to 2.8° (tele end)			
Minimum working distance	35 mm (wide end) to 800 mm (tele end)			
Sync system	Internal/External (V-Lock)			
Minimum illumination	0.7 lx (typical) (F1.4, 50 IRE)			
S/N ratio	More than 50 dB			
Electronic shutter	1/1 to 1/10,000 s, 22 steps			
White balance	Auto, ATW, Indoor, Outdoor, One-push, Manual			
Gain	Auto/Manual (-3 to 28 dB, 2 dB steps)			
Camera control interface	VISCA (TTL signal level), baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, Stop bit: 1/2 selectable			
Storage temp./humidity	-20 to 60 °C / 20 to 95 %			
Operating temp./humidity	0 to +50 °C / 20 to 80 %			
Power consumption	6 to 12 V DC/1.6 W (motors inactive), 2.5 W (motors active)			
Mass	230 g			
Dimensions (W x H x D)	52.0 x 57.5 x 88.5 mm			

## Functions

	FCB-EX480C	FCB-EX480CP	FCB-EX48C	FCB-EX48CP
Privacy zone masking			○ (Spherical)	
Auto ICR Mode	○			×
E-Flip Function			○	
Mirror Image			○	
Alarm function			○	
Focus system	Auto (Sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF			
Spot AE	Auto, Manual, Priority mode, Bright, EV compensation, Back-light compensation			
EV compensation	-10.5 to +10.5 dB (1.5 dB steps)			
Outline compensation (Aperture)	16 steps			
Back-light compensation	○			
Picture effect	E-Flip, Nega Art, Black&White, Mirror Image			

## Location and Function of Parts and Controls

<FCB-EX980S/EX980SP/EX980/EX980P>

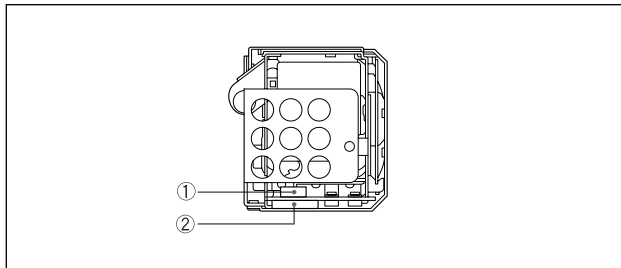


- ① **Lens**
- ② **CN601 connector (Key SW)**
- ③ **TELE button**
- ④ **WIDE button**
- ⑤ **Tripod screw holes**

When a tripod is used, please use 10 mm screws to attach it to the camera. Also, please be sure to attach the tripod securely.

## Rear Panel

<FCB-EX980S/EX980SP/EX980/EX980P>



- ① **CN902 connector**
- ② **CN901 connector**

## Connector Pin Assignments

<FCB-EX980S/EX980SP/EX980/EX980P>

### ●CN902 4-pin (for Y/C Video Out)

Pin No.	Name	Level
1	Y_OUT	1.0 Vp-p (75Ω terminate) Luminance signal
2	GND (for Y signal)	-
3	C_OUT	Chrominance signal
4	GND (for C signal)	-

Connector: JST S4B-ZR-SM3A-TF

### ●CN901 9-pin (for DC/Video Out/VD-Lock Pulse/VISCA)

Pin No.	Name	Level
1	RxD	TTL/CMOS Level Read Data
2	TxD	TTL/CMOS Level Send Data
3	GND (for RxD & TxD)	-
4	DC IN	9.0 V ± 3.0 V
5	GND (for DC IN)	-
6	VBS OUT	1.0 Vp-p (75Ω terminate)
7	GND (for VBS OUT)	-
8	V LOCK PULSE	External VD-Lock Pulse (EX.FV: Negative, 3.0 Vp-p 50% duty)
9	GND (VL PULSE)	-

Connector: ELCO PG-FPC9SM-T

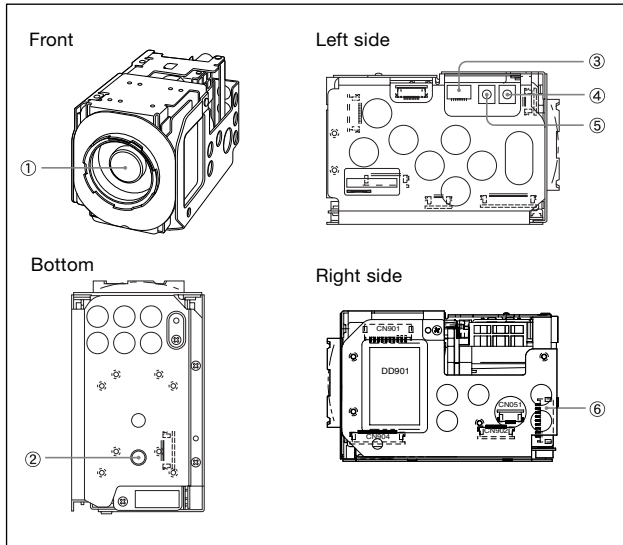
### ●CN601 12-pin (for Key Switch Control)

Pin No.	Name	Level
1	GND	-
2	GND	-
3	KEY_AD0	Pull up to 3.0 V by 100 kΩ
4	KEY_AD1	Pull up to 3.0 V by 100 kΩ
5	KEY_AD2	Pull up to 3.0 V by 100 kΩ
6	KEY_AD3	Pull up to 3.0 V by 100 kΩ
7	KEY_AD4	Pull up to 3.0 V by 100 kΩ
8	KEY_AD5	Pull up to 3.0 V by 100 kΩ
9	KEY_AD6	Pull up to 3.0 V by 100 kΩ
10	KEY_AD7	Pull up to 3.0 V by 100 kΩ
11	NC	-
12	Strobe	Strobe timing pulse (0 to 3.0 V)

Connector: MOLEX 52689-1293

## Location and Function of Parts and Controls

<FCB-EX480C/EX480CP/EX48C/EX48CP>

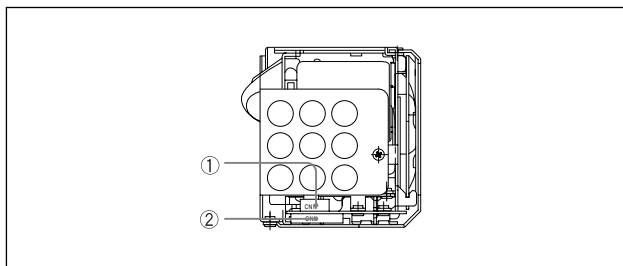


- ① Lens
- ② Tripod screw holes
- ③ CN601 connector
- ④ TELE button
- ⑤ WIDE button
- ⑥ CN903 connector

When a tripod is used, please use 10 mm screws to attach it to the camera. Also, please be sure to attach the tripod securely.

## Rear Panel

<FCB-EX480C/EX480CP/EX48C/EX48CP>



- ① CN991 connector
- ② CN992 connector

## Connector Pin Assignments

<FCB-EX480C/EX480CP/EX48C/EX48CP>

### ●CN903 9-pin (for DC/Video Out)

Pin No.	Name	Level
1	DC IN	6.0 V to 12.0 V
2	GND (for DC IN)	-
3	NC	-
4	VBS OUT	Composite video signal
5	GND (for VBS OUT)	-
6	Y_OUT	1.0 ± 0.2 V
7	GND (for Y signal)	-
8	C_OUT	-
9	GND (for C signal)	-

Connector: JST S9B-ZR-SM3A-TF

### ●CN992 9-pin (for DC/Video Out/VD-Lock Pulse/VISCA)

Pin No.	Name	Level
1	RxD	CMOS 5.0 V (low: max. 0.8 V, high: min. 2.0 V) Read Data
2	TxD	CMOS 5.0 V (low: max. 0.1 V, high: min. 4.4 V) Send Data
3	GND (for RxD & TxD)	-
4	DC IN	9.0 ± 3.0 V
5	GND (for DC IN)	-
6	VBS OUT	1.0 ± 0.2 V
7	GND (for VBS OUT)	-
8	V LOCK PULSE	External VD-Lock Pulse (EX.FV: Negative, 3.0 Vp-p 50% duty)
9	GND (VL PUSE)	-

Connector: ELCO PG-FPC-9SM-T

### ●CN601 12-pin (for Key Switch Control)

Pin No.	Name
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	KEY_AD7
11	NC
12	Strobe

Connector: MOLEX 52689-1293

### ●CN991 4-pin (for Y/C Video Out)

Pin No.	Name
1	Y_OUT
2	GND (for Y signal)
3	C_OUT
4	GND (for C signal)

Connector:  
JST S4B-ZR-SM3A-TF

## Initial Settings, Custom Preset and Backup

Initial settings for the various functions of the FCB-EX980/EX980S/EX480C/EX480B, FCB-EX48C/EX48B are indicated in the “Initial settings” column. The “Custom preset” column indicates whether the custom preset function can be used to store the settings. The function enables the stored settings to be recalled automatically when the camera is turned on. The “Standby backup” column indicates whether the data is preserved even when the camera is powered OFF. A circle “○” in this column signifies that the data is preserved. A cross “X” signifies that the data IS NOT preserved.

### ●FCB-EX980/EX980S/EX480C

Mode/Position	Initial settings	Custom preset	Standby backup
Zoom Position	Wide end	○	○
D-Zoom On/Off	On	○	○
D-Zoom Separate/Combine	Combine	○	○
D-Zoom Position	00h	○	○
Focus Position	—	○	○
Focus Auto/Manual	Auto	○	○
Near Limit Setting	8000h (40cm)	○	○
AF Sensitivity	Normal	○	○
AF Mode	Normal	○	○
AF Run Time	5 sec	○	○
AF Interval	5 sec	○	○
WB Mode	Auto	○	○
WB Data (Rgain, Bgain)	—	○	○
One Push WB Data	—	○	○
AE Mode	Full Auto	○	○
Slow Shutter Mode	Manual	○	○
Shutter Position	1/60sec (NTSC), 1/50sec (PAL)	○	○
Iris Position	—	○	○
Gain Position	—	○	○
Bright Position	—	○	○
Exposure Compensation On/Off	Off	○	○
Exposure Compensation Amount	±0	○	○
BackLight On/Off	Off	○	○
Spot AE On/Off	Off	○	○
Spot AE Position Setting	X=8, Y=8	○	○
Aperture Level	5	○	○
LR Reverse On/Off	Off	○	○
Freeze On/Off	Off	X	X
Picture Effect	Off	○	○
Camera Memory	Same as the initial value setting	○	○
Display On/Off	Off	○	○
Mute On/Off	Off	X	X
ICR On/Off	Off	○	○
Auto ICR On/Off	Off	○	○

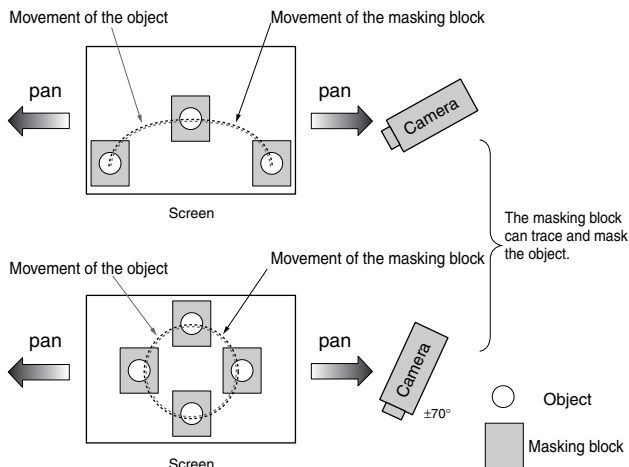
### ●FCB-EX48C

Mode/Position	Initial settings	Custom preset	Standby backup
Zoom Position	Wide end	○	○
D-Zoom On/Off	On	○	○
D-Zoom Separate/Combine	Combine	○	○
D-Zoom Position	00h	○	○
Focus Position	—	○	○
Focus Auto/Manual	Auto	○	○
Near Limit Setting	8000h (40cm)	○	○
AF Sensitivity	Normal	○	○
AF Mode	Normal	○	○
AF Run Time	5 sec	○	○
AF Interval 5 sec	○	○	○
WB Mode	Auto	○	○
WB Data (Rgain, Bgain)	—	○	○
One Push WB Data	—	○	○
AE Mode	Full Auto	○	○
Slow Shutter Mode	Manual	○	○
Shutter Position	1/60sec (NTSC), 1/50sec (PAL)	○	○
Iris Position	—	○	○
Gain Position	—	○	○
Bright Position	—	○	○
Exposure Compensation On/Off	Off	○	○
Exposure Compensation Amount	±0	○	○
BackLight On/Off	Off	○	○
Spot AE On/Off	Off	○	○
Spot AE Position Setting	X=8, Y=8	○	○
Aperture Level	5	○	○
LR Reverse On/Off	Off	○	○
Freeze On/Off	Off	X	X
Picture Effect	Off	○	○
Camera Memory	Same as the initial value setting	○	○
Display On/Off	Off	○	○
Mute On/Off	Off	X	X

## Features Description

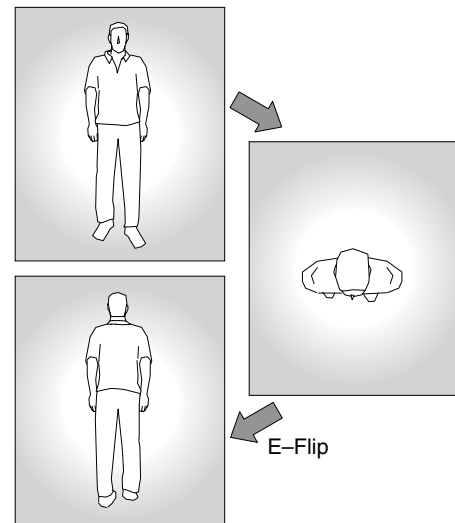
### ■ The new privacy zone masking (PZM) function “Spherical Privacy Zone Masking”

At the pan while tilting, this function enables the masking block to trace the movement of the object precisely to mask the object.



### ■ E-Flip (Electrical Flip)

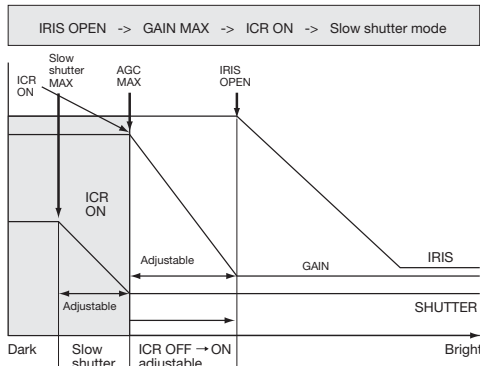
•Effective for dome camera applications



# Features Description

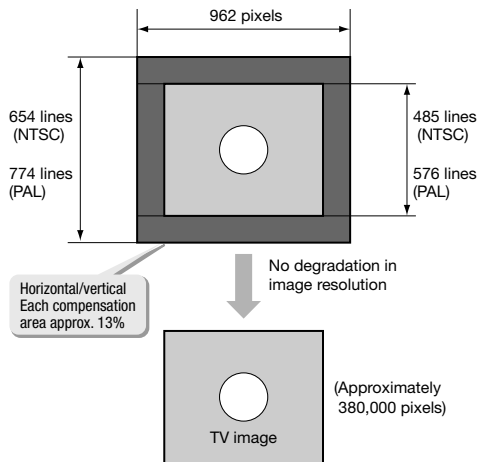
## ■ Auto ICR (IR Cut filter Removal) Mode

When auto slow shutter is on

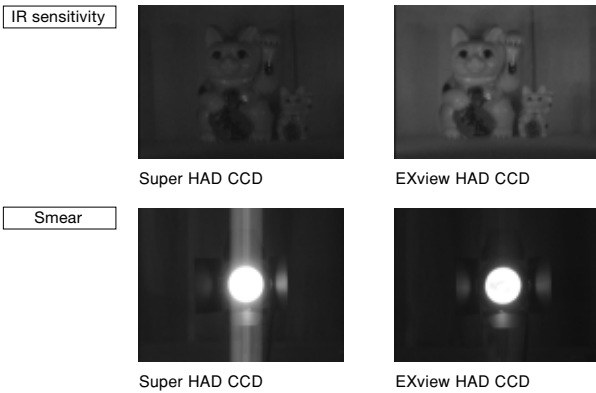


Ideal for day/night monitoring. Has a function that prevents misclassification in infrared light.

## ■ Electronic vibration resistance function (Effective for the vibration of about 10Hz)



## ■ EXview HAD CCD



\* Super HAD CCD and EXview HAD CCD are trademarks of Sony Corporation.

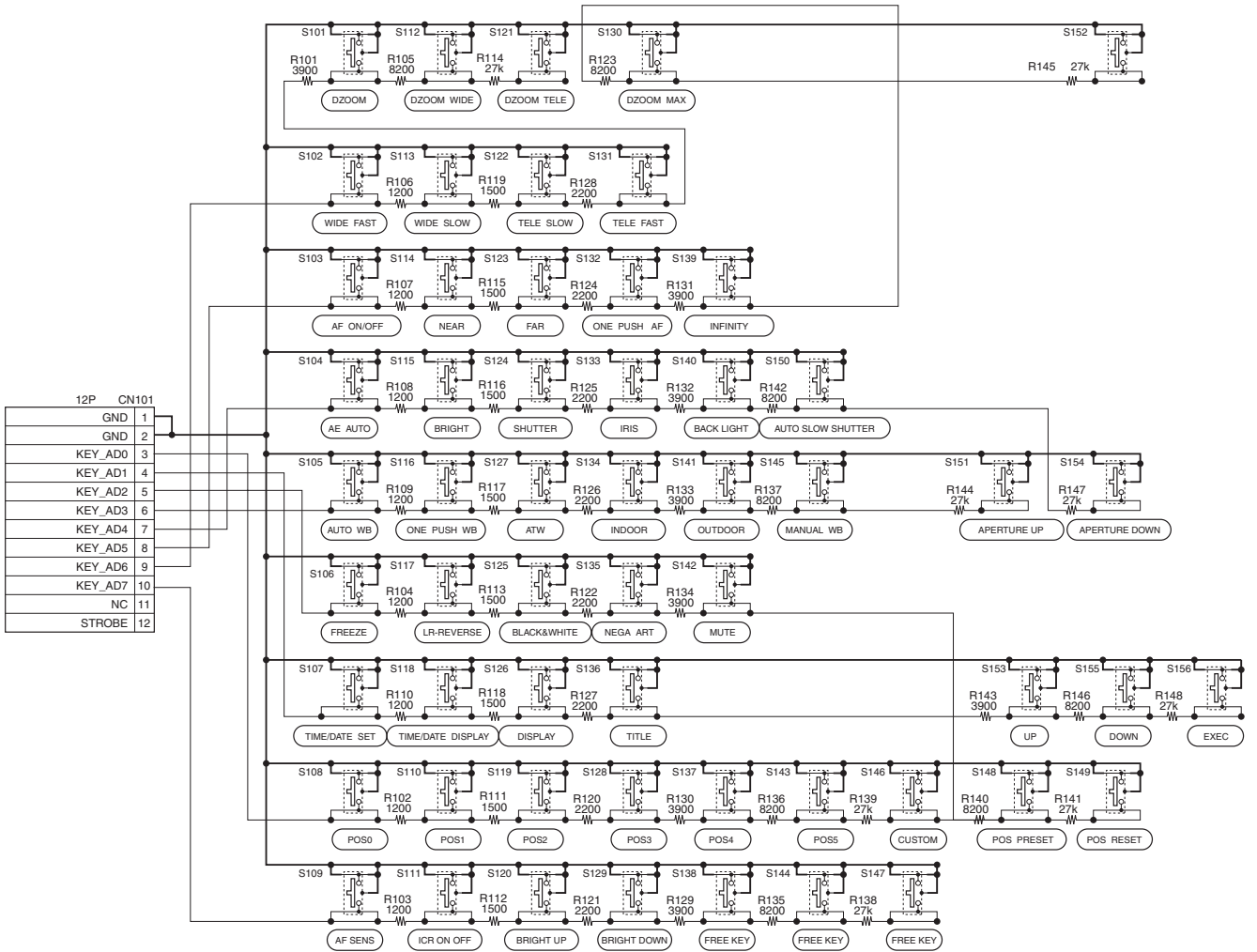
# Key Switch Circuitry

See page 125.



# Key Switch Circuitry

<FCB-IX Series, FCB-EX Series>



**Note**

Shown above is an example of key switch circuit. It includes switches which do not work. For more details, refer to the command list, check with your camera, or contact your authorized Sony dealer or the store where you purchased the camera.

Non-TV Format

B/W Model

TV Format

Color Model

Intelligent

Digital Interface  
IEEE1394

Camera Link compatible

Accessories

Color PTZ Model

Color Camera Block