SONY

Colour Block Cameras
FCB-EX Series

Sony's new FCB-EX series of colour block cameras are equipped with an incredibly high 26x zoom lens which has a wide/telephoto horizontal field of view, making them ideally suited for use in security domes and traffic monitoring applications. These cameras incorporate an advanced Spherical Privacy Zone Masking feature which allows the masking function to be interlocked with the camera's pan/tilt/zoom movements, regardless of the camera angle, ensuring the individual's privacy.

In addition, the FCB-EX series incorporates high-performance Digital Signal Processing (DSP) which provides 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 which features an incredibly high telephoto zoom capability and image stabiliser 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 which has a wide horizontal field of view.

The FCB-EX480C/EX48 series is equipped with a high-sensitivity CCD, allowing images to be captured at a minimum illumination of 0.7 lx.

In addition to the features above, these cameras are conveniently equipped with a variety of functions such as E-Flip, Alarm, Picture Freeze, and Auto ICR*1, which have all been inherited from earlier FCB-EX series cameras. Moreover, the entire FCB-EX series uses lead-free solder and halogen-free printed-circuit boards, making these cameras environmentally friendly.

Combining superb picture quality with a variety of unique and convenient features, the FCB-EX series cameras are the perfect match, both indoor and outdoor, for demanding security and monitoring applications.

*1 FCB-EX980S/EX980SP, FCB-EX980/EX980P, FCB-EX480C/EX480CP only

Features

- 26x optical zoom capability*1
- Advanced Spherical Privacy Zone Masking function (max. 24 masking blocks)
- SMART lens control (Sony Modular Automatic Lens Reset Technology)
- Electronic-Flip (E-Flip) function
- Alarm function
- Auto ICR (IR Cut Filter Removal) Mode*2
- Image stabiliser*3
- High-performance Digital Signal Processing (DSP)
- High-speed serial interface (max. 38.4 Kb/s) with TTL signal-level control (VISCA™ protocol)
- Equipped with key switch connector (CN601) for camera control with external equipment
- Various customisable settings
- Internal/External sync
- Low power consumption (1.6 W with motors inactive)
- EEPROM backup system without battery
- 16-bytes of free memory is available for recording data such as product serial numbers and camera/system ID numbers
- Lead-free solder and halogen-free printed-circuit boards

*1 FCB-EX980S/EX980SP, FCB-EX980/EX980P only

*2 FCB-EX980S/EX980SP, FCB-EX980/EX980P FCB-EX480C/EX480CP only

*3 FCB-EX980S/EX980SP only

Features

26x Zoom Capability with Wide/Telephoto Horizontal Field of View (FCB-EX980S/EX980SP, FCB-EX980/EX980P)

These cameras incorporate a 26x optical zoom lens, allowing for a zoom capability of up to 312x when used in combination with its 12x digital zoom.

Users can zoom in on small or distant objects with exceptional clarity.

The FCB-EX980S/EX980SP cameras feature a 42º-wide field of view that provides the highest telephoto zoom capability (1.6º) available in the Sony FCB family. The zoom range is “tele-shifted” toward the telephoto end. The FCB-EX980/EX980P cameras feature a wide field of view of 54º and a 2.2º telephoto capability.

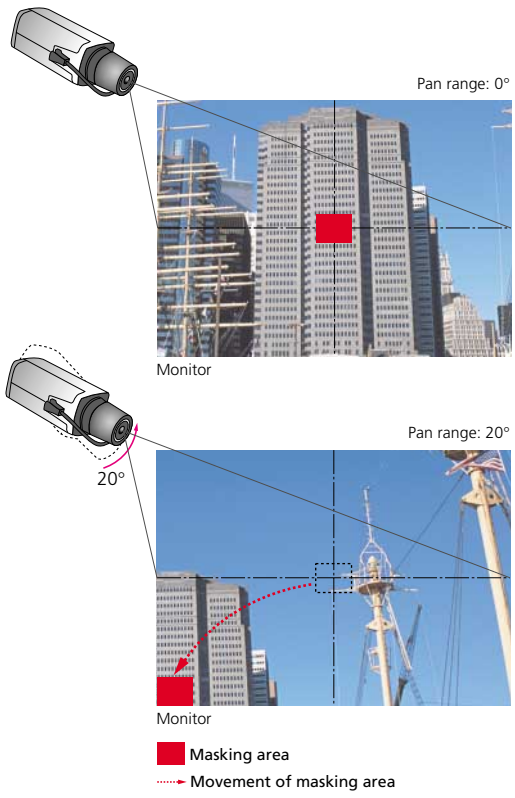
Advanced Dynamic Spherical Privacy Zone Masking

A newly developed Spherical Privacy Zone Masking feature allows unwanted or prohibited areas within an image to be masked precisely and appropriately. This technology allows masking areas to be interlocked with the camera's pan/tilt/zoom movements regardless of the camera angle.

What is unique about this feature as compared to conventional masking, is that the masked areas remain covered even when the camera is circling.

In addition, when the zoom is engaged, the size of all masked areas adjusts in proportion to the zoom position.

This feature is essential for dome cameras used in wide-area monitoring applications.



Masking Controls

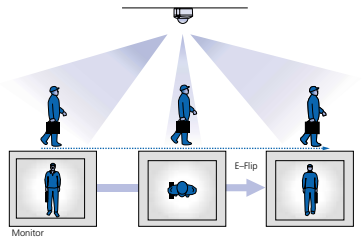
Maximum number of pre-set masking blocks	24 blocks
Maximum number of masking blocks to be displayed	8 blocks
Resolution of masking blocks	160 (H) x 120 (V)
Interlock with zoom	Yes
Interlock with pan/tilt *1	Yes
Maximum colours to be pre-set	28 *2
Maximum colours to be displayed	2 *2
Translucent masking	Yes
Gray scale	Yes *3
Individual masking On/Off	Yes
Title/day/time superimposition	Yes
Non-Interlock	Yes

*1 When used in a security dome
*2 Including translucent colour
*3 6 gradations selectable

Users can easily set masking areas on the screen simply by positioning each area to be masked in the centre of the viewer (indicated by two intersecting lines), and executing the masking function. A maximum of 24 masking areas can be pre-set to any of 160 horizontal and 120 vertical masking blocks, and up to eight block positions with two colours can be selected together.

Electronic-Flip (E-Flip)

The FCB-EX cameras have an E-Flip function that electronically flips an image upside down so that it is displayed on the monitor accurately. In a dome application for example, if a tracked object moves beneath the camera dome, the image can be inverted to maintain the correct orientation.



Alarm Function

The FCB-EX series provides an Alarm function that detects changes in AF, AE, or both AF and AE levels of an image and outputs an alarm signal as required to external equipment via its control interface using VISCA protocol.

This feature is ideal for automatically performing functions such as sounding an audible alarm or triggering an electric door strike to lock or unlock a door when focus or luminance levels change.

These cameras are also equipped with a Spot AE function that allows them to detect changes in AE levels of designated areas of the images, and output an alarm signal. Users can designate multiple detecting areas from any of 16 vertical and 16 horizontal blocks.

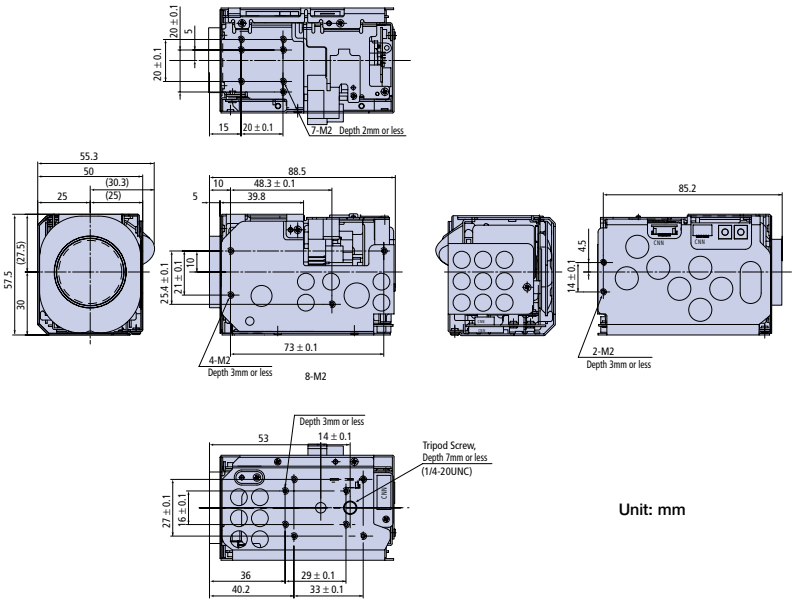
In addition, these cameras feature a DAY/NIGHT mode that can output an alarm signal via the VISCA protocol in response to a change in the designated brightness/darkness level.

FCB-EX Series Line-Up

FCB-EX980S/EX980SP
FCB-EX980/EX980P

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 stabiliser 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



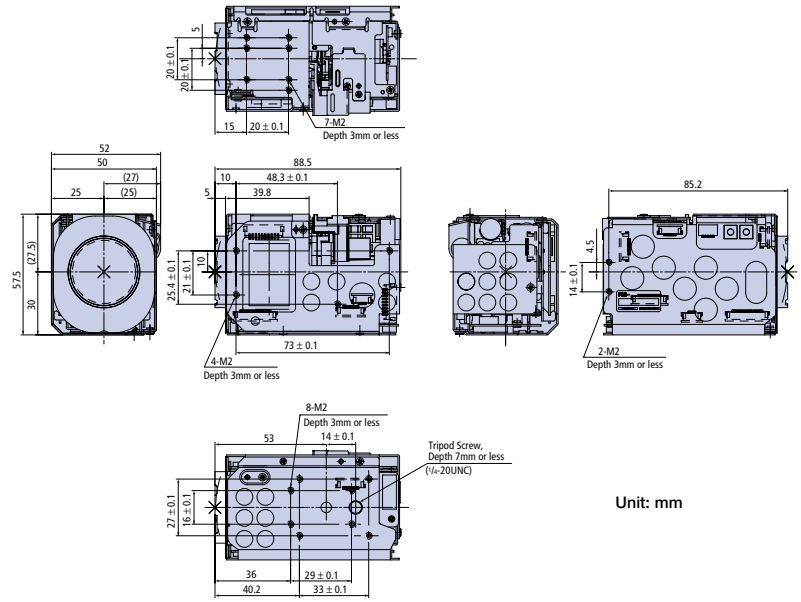
Unit: mm

FCB-EX480C/EX480CP

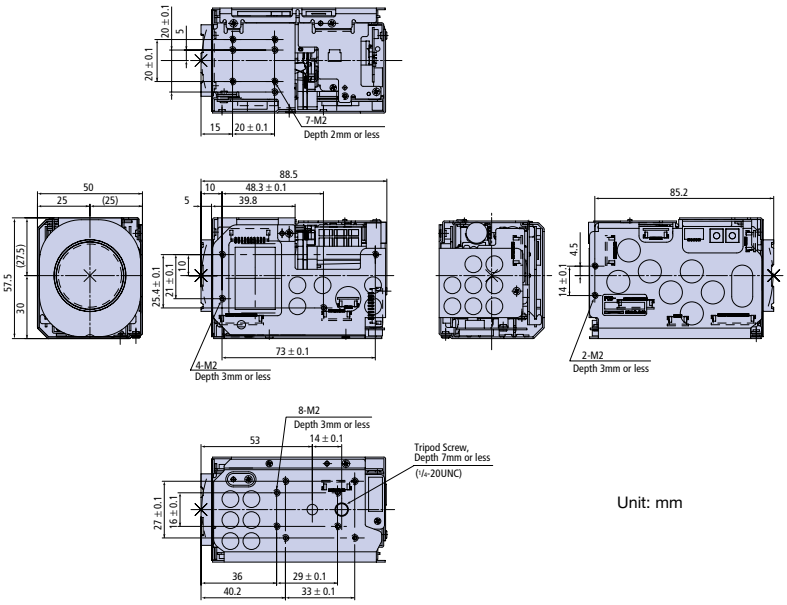
FCB-EX480C/EX480CP

- 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



Unit: mm



Unit: mm

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

Pin Assignment

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

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 ± 3.0 V
5	GND (for DC IN)	–
6	VBS OUT	1.0 Vp-p (75 Ω 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 00 6200 509 13000

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 52689-1240 FFC (0.5 mm)

FCB-EX480C/EX480CP/EX48C/EX48CP

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

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 ± 3.0V
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 PULSE)	–

Connector: ELCO 00 6200 509 13000

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

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 52689-1240 FFC (0.5 mm)

EXview HAD CCD™

(FCB-EX980/EX980P, FCB-EX480C/EX480CP, FCB-EX48C/EX48CP)

Smear

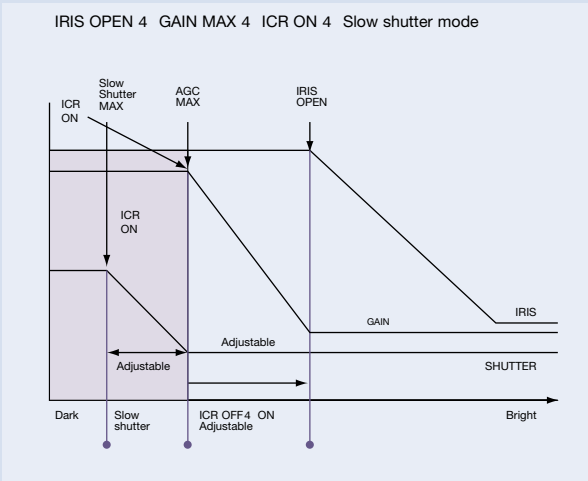
without EXview CCD | with EXview CCD

IR sensitivity

without EXview CCD | with EXview CCD

Auto ICR Mode

(FCB-EX980S/EX980SP,FCB-EX980/EX980P, FCB-EX480C/EX480CP)



When auto slow shutter is on

SMART Lens Control
(Sony Modular Automatic Lens Reset Technology)

These FCB cameras incorporate a SMART lens control technology that monitors lens focus position during zooming and automatically compensates for mechanical misalignment which may occur over long periods of continuous use. With the introduction of SMART lens control, periodic lens initialisation is no longer required in continuous 24-hour operation.

EXview HAD CCD™
(FCB-EX980/EX980P, FCB-EX480C/EX480CP, FCB-EX48C/EX48CP)

Equipped with Sony EXview HAD CCD technology, these cameras provide excellent sensitivity, and low smear levels.

Auto ICR (IR Cut Filter Removal) Mode
(FCB-EX980S/EX980SP, FCB-EX980/EX980P, FCB-EX480C/EX480CP)

For optimised sensitivity in both day and night-shooting applications, these cameras incorporate an Auto ICR function. With a set level of darkness, the IR Cut filter is automatically disabled (ICR ON) and the infrared sensitivity is increased. With a set level of brightness, the filter is automatically enabled (ICR OFF). The ICR automatically engages depending on the ambient light, allowing the cameras to be effective in a variety of lighting conditions.

Image stabiliser
(FCB-EX980S/EX980SP)

The image stabiliser function minimises the appearance of shaky images caused by low-frequency vibration and maintains a normal horizontal resolution. This function is useful for outdoor surveillance and traffic monitoring applications.

Picture Freeze

The FCB-EX series is equipped with a Picture Freeze function that allows for the output of a still image while the camera is panning, tilting, zooming, focusing, initialising the lens, or performing pre-set operations. For example, the camera will output a still image before it begins to pan, tilt, or zoom, and once the operation is completed, the camera continues to display images. Unnecessary images are not displayed.

Environmentally-friendly lead-free design

FCB-EX series cameras use lead-free solder and halogen-free printed-circuit boards, making the camera environmentally friendly.

Specifications

	FCB-EX980S	FCB-EX980SP	FCB-EX980	FCB-EX980P
Image device	1/4 type Super HAD		1/4 type EXview HAD CCD	
Effective picture elements	Approx. 630,000 pixels	Approx. 740,000 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)	42.0° (Wide end) to 1.6° (Tele end)		54.2° (Wide end) to 2.2° (Tele end)	
Minimum working distance	320mm (Wide end) to 1500mm (Tele end)			
Sync system	Internal/External (V-Lock)			
Minimum illumination	2.0 lx (typical) (50 IRE)		1.0 lx (typical) (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)			
AE control	Auto, Manual, Priority mode, Bright, EV compensation, Back-light compensation			
EV compensation	-10.5 to +10.5 dB (1.5 dB steps)			
Back-light compensation	On/Off			
Privacy zone masking	On/Off (24 positions)			
Flicker cancel	Auto	–	Auto	–
Focusing system	Auto (sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF			
Picture effects	E-Flip, Nega Art, Black & White, Mirror Image			
Camera operation switch	Zoom Tele, Zoom Wide			
Video output	VBS: 1.0 Vp-p (sync negative), Y/C Output			
Camera control interface	VISCA (TTL signal level), baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, Stop bit: 1 or 2 selectable			
Storage temperature	-20 to 60°C (-4 to 140°F)			
Operating temperature	0 to +50°C (32 to 122°F)			
Power consumption	6 to 12 V DC/1.6 W (motors inactive), 3.6 W (motors active)			
Mass	230 g (8.1 oz)			
Dimensions (WxHxD)	55.3 x 57.5 x 88.5 mm (2 1/4 x 2 3/8 x 3 1/2 inches)			

	FCB-EX480C	FCB-EX480CP	FCB-EX48C	FCB-EX48CP
Image device	1/4 type EXview HAD CCD			
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) (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)			
AE control	Auto, Manual, Priority mode, Bright, EV compensation, Back-light compensation			
EV compensation	-10.5 to +10.5 dB (1.5 dB steps)			
Back-light compensation	On/Off			
Privacy zone masking	On/Off (24 positions)			
Flicker cancel	Auto	–	Auto	–
Focusing system	Auto (sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF			
Picture effects	E-Flip, Nega Art, Black & White, Mirror Image			
Camera operation switch	Zoom Tele, Zoom Wide			
Video output	VBS: 1.0 Vp-p (sync negative), Y/C Output			
Camera control interface	VISCA (TTL signal level), baud rate: 9.6 Kb/s, 19.2 Kb/s, 38.4 Kb/s, Stop bit: 1 or 2 selectable			
Storage temperature	-20 to 60°C (-4 to 140°F)			
Operating temperature	0 to +50°C (32 to 122°F)			
Power consumption	6 to 12 V DC/1.6 W (motors inactive), 2.5 W (motors active)			
Mass	230 g (8.1 oz)			
Dimensions (WxHxD)	52.0 x 57.5 x 88.5 mm (2 1/8 x 2 3/8 x 3 1/2 inches)			

Sony Contacts

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