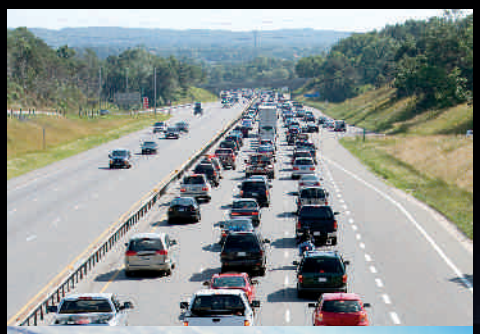
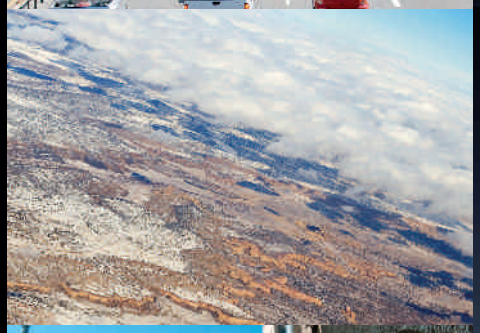




FCB-EX1020/FCB-EX1020P

FCB-EX995E/FCB-EX995EP

FCB-EX985E/FCB-EX985EP

FCB-EX490E/FCB-EX490EP

FCB-EX48E/FCB-EX48EP

FCB-EX Series

Color Block Cameras

INTRODUCTION

Sony's FCB E Series of color block cameras offer excellent picture quality with a choice of lenses and easy operation for a wide variety of applications. The FCB E Series includes five new cameras ranging from 18x to 36x optical zoom lenses with outstanding features for security, intelligent traffic, unmanned vehicles, low vision and videoconferencing applications. Sony's comprehensive family of block cameras are specifically designed to be integrated into security domes, police vehicles, photo booths, document stands and underground inspection systems. With this breadth of choices, it's never been easier to select the right Sony camera for your specific monitoring applications.

FCB-EX Series Cameras	FCB-EX1020 FCB-EX1020P	FCB-EX995E FCB-EX995EP	FCB-EX985E FCB-EX985EP	FCB-EX490E FCB-EX490EP	FCB-EX48E FCB-EX48EP
Optical Zoom Lens	**36x**	**28x**		**18x**	
Key Features	**Progressive Scan** **Wide D** **Auto ICR** **Image Stabilization** **Digital Output**	**Progressive Scan** **Wide D** **Auto ICR** **Image Stabilization** **Digital Output**	**Auto ICR** **Image Stabilization** **Digital Output**	**Progressive Scan** **Wide D** **Auto ICR** **Digital Output**	**Digital Output**

FEATURES

Wide Dynamic Range with New Technology

FCB-EX1020/FCB-EX1020P FCB-EX995E/FCB-EX995EP
FCB-EX490E/FCB-EX490EP

The Wide Dynamic Range feature allows for the capture clear of images in extreme lighting environments.

Auto Mode: When shooting in high or low contrast lighting situations, these cameras monitor the luminance differences within an image and automatically switch on and off the Wide D feature depending on the visibility of the subjects and background.

Interlace Wide-D and Progressive Wide-D Modes: There are two modes to choose from.The Interlace mode is ideally suited for high-contract lighting environments. The Progressive Scan mode is suited for low-contrast environments.

<At normal speed shutter> <At high speed shutter>

simulated image

True Progressive Scan Broadens Capabilities

FCB-EX1020/FCB-EX1020P FCB-EX995E/FCB-EX995EP
FCB-EX490E/FCB-EX490EP

Ideally suited for IP-ready monitoring applications, these cameras adopt a Progressive Scan mode to provide smooth and clear images when viewing details in a moving image (i.e., license plate of moving vehicle, a person running). Since network cameras typically have backend systems based upon progressive scan, the original picture quality can be maintained without any conversion from interlace scan to progressive scan.

Digital Output (ITU-R BT656)

All Models

These cameras are equipped with a digital interface (Y/Cb/Cr 4:2:2) which is comparable to ITU-R-BTU656. By using the digital interface, the quality of the camera's video signal does not deteriorate. In addition, there is no need for an external analog/digital converter between the camera and other equipment.

High Resolution & High Sensitivity Images

All Models

All the cameras in the FCB E Series deliver exceptional picture quality and high sensitivity – ideal for security applications. These cameras achieve a high horizontal resolution of 550 TV lines enabling the reproduction of amazingly clear and detailed images. The FCB-EX985E/EX985EP camera achieves 0.25 lx (F1.35, 50IRE) by incorporating a Super HAD CCD II sensor and bright 28x lens (f=1.35).

Auto IR-Cut Filter Removal (Auto ICR)

FCB-EX1020/FCB-EX1020P FCB-EX995E/FCB-EX995EP
FCB-EX985E/FCB-EX985EP FCB-EX490E/FCB-EX490EP

The Auto ICR function incorporated in these cameras offers optimal sensitivity in both day-and-night shooting applications. At a set level of darkness, the IR-cut filter is automatically disabled (ICR ON) and the near-infrared sensitivity is increased. At a set level of brightness, the filter is automatically enabled (ICR OFF). The IR-cut filter automatically engages depending on the ambient light, allowing the cameras 24/7 operation in a variety of lighting conditions.

Image Stabilization – StableZoom™ Mode

FCB-EX1020/FCB-EX1020P FCB-EX995E/FCB-EX995EP
FCB-EX985E/FCB-EX985EP

The FCB-EX1020/EX1020P, FCB-EX995E/EX995EP and FCB-EX985E/EX985EP cameras adopt a new method of Image Stabilization by using the digital zoom. The Image Stabilization function starts naturally without an abrupt change to the horizontal angle of view.

Bright, Fast and Robust 28x Zoom Lens

FCB-EX995E/FCB-EX995EP FCB-EX985E/FCB-EX985EP

The FCB-EX995/995EP and FCB-EX985E/985EP cameras incorporate a new 28x bright zoom lens with f=1.35. This lens has a fast zooming capability (2.5 seconds from tele end to wide end) and high durability.

White Balance – New Modes

All Models

Sodium Vapor Lamp Mode: When a camera is shooting under a sodium vapor lamp (typically a street lamp or tunnel lamp), images could appear to have a yellowish tint. The new FCB E Version cameras are equipped with a new Sodium Vapor Lamp Mode that automatically compensates for the sodium vapor lamp degree of Kelvin to restore objects to their original color.

Outdoor Auto Mode: When a camera is shooting at dawn or dusk, images could appear bluish. The new FCB E Version cameras are equipped with a new Outdoor Auto Mode feature that automatically adjusts the white balance to reduce the dark tones at dawn or dusk.

Enhanced Noise Reduction

All Models

By combing 2D and 3D noise reduction, the cameras offer a selection of noise-reduction settings (from Level 1 to Level 5) to allow the user to choose the ideal level for shooting conditions.

Slow AE Response

All Models

The FCB E Series cameras allow the user to set the auto response speed (up to 10 minutes) to enable the cameras to adapt to changes in lighting conditions. For example, when shooting in an underground parking lot, valuable images could otherwise be missed when car headlights cause an abrupt change in lighting conditions.

Color Enhancement

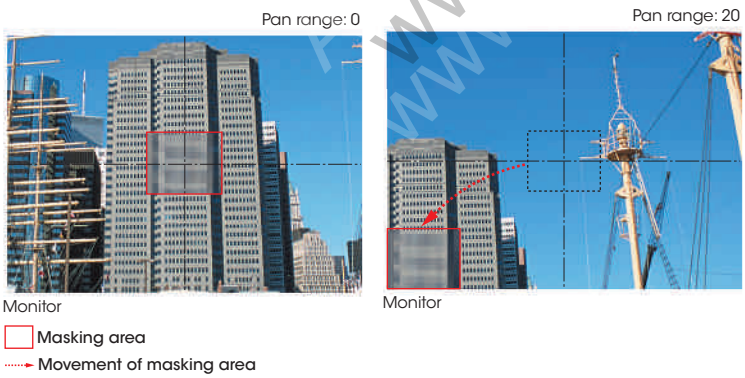
All Models

Ideally suited for low vision applications, new color enhancement options can make reading text and pictures less challenging. Full color images can be changed to black and white, and then inverted into two selected colors.

Advanced Spherical Privacy Zone Masking

All Models

With these new cameras, a maximum of eight masking areas can be displayed on the monitoring screen. Also, if these block cameras are integrated into a Pan/Tilt/Zoom (P/T/Z) camera system, masked areas can be interlocked with P/T/Z movement, regardless of the camera angle or camera movement. Up to 24 masking areas can be preset in the entire viewing angle of a P/T/Z camera. In addition, these cameras can mask unwanted or prohibited areas within an image using a mosaic effect on top of the color masking function.



As camera pans and tilts, the masked area moves to maintain the desired covered area.

Other Features

All Models

- Electronic Flip (E:Flip)
- Multi-line On-Screen Display
- Video Motion Detection
- Picture Freeze
- SMART (Sony Modular Automatic Lens Reset Technology)
- Gain Limit Setting
- Zoom Limit Setting
- Zoom Speed-up in Zoom Direct Mode (Focus Trace On/Off)
- Focus Compensation in ICR Mode
- Alarm Signal Output in Auto ICR Mode
- Image Stabilization Hold

PIN ASSIGNMENT

■ 4-pin for Y/C Video Out

CN500 **FCB-EX1020/FCB-EX1020P**
FCB-EX995E/FCB-EX995EP
FCB-EX985E/FCB-EX985EP
FCB-EX490E/FCB-EX490EP
FCB-EX48E/FCB-EX48EP

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

Connector: JST S4B-ZR-SM4A-TF (LF)

■ 9-pin for DC/Video Out

CN501 **FCB-EX1020/FCB-EX1020P**
FCB-EX995E/FCB-EX995EP
FCB-EX985E/FCB-EX985EP
FCB-EX490E/FCB-EX490EP
FCB-EX48E/FCB-EX48EP

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 (75 Ω terminate)
7	GND (for VBS OUT)	–
8	V LOCK PULSE	External VD-Lock Pulse (Negative, 3.0 Vp-p 50% duty)
9	GND (for V LOCK PULSE)	–

Connector: KYOCERA ELCO 00 6200 509 130 000+

■ 12-pin for Digital Out

CN200 **FCB-EX1020/FCB-EX1020P**
FCB-EX995E/FCB-EX995EP
FCB-EX985E/FCB-EX985EP
FCB-EX490E/FCB-EX490EP
FCB-EX48E/FCB-EX48EP

Pin No.	Name	Level
1	GND	
2	Digital Out 0	0 - 3.3 Vp-p
3	Digital Out 1	0 - 3.3 Vp-p
4	Digital Out 2	0 - 3.3 Vp-p
5	Digital Out 3	0 - 3.3 Vp-p
6	Digital Out 4	0 - 3.3 Vp-p
7	Digital Out 5	0 - 3.3 Vp-p
8	Digital Out 6	0 - 3.3 Vp-p
9	Digital Out 7	0 - 3.3 Vp-p
10	GND	
11	CLOCK	0 - 3.3 Vp-p
12	GND	

Connector: KYOCERA ELCO 08 6222 012 101 848+ [FFC 0.5 mm Pitch]

■ 12-pin for Key Switch Control

CN702 **FCB-EX1020/FCB-EX1020P**
FCB-EX995E/FCB-EX995EP
FCB-EX985E/FCB-EX985EP
FCB-EX490E/FCB-EX490EP
FCB-EX48E/FCB-EX48EP

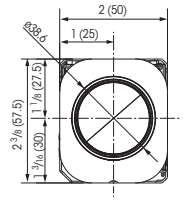
Pin No.	Name	Level
1	GND	–
2	GND	–
3	KEY_AD0	Pull up to 3.0 V by 100 kΩ
4	KEY_AD1	Pull up to 3.0 V by 100 kΩ
5	KEY_AD2	Pull up to 3.0 V by 100 kΩ
6	KEY_AD3	Pull up to 3.0 V by 100 kΩ
7	KEY_AD4	Pull up to 3.0 V by 100 kΩ
8	KEY_AD5	Pull up to 3.0 V by 100 kΩ
9	KEY_AD6	Pull up to 3.0 V by 100 kΩ
10	KEY_AD7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

Connector: KYOCERA ELCO 08 6222 012 101 848+

DIMENSIONS

FCB-EX1020/FCB-EX1020P

Front



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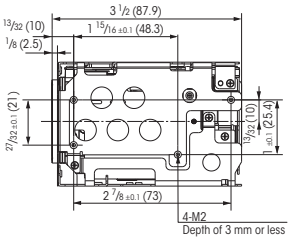

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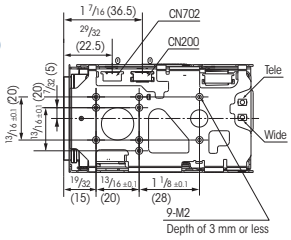

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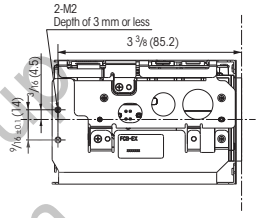

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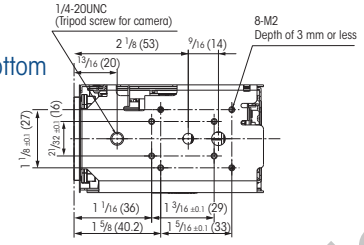

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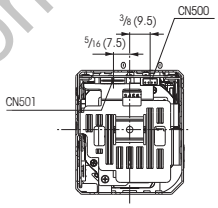
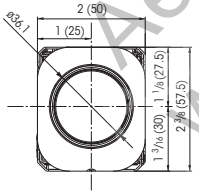


Unit: inches (mm)

FCB-EX995E/FCB-EX995EP/FCB-EX985E/FCB-EX985EP

Front



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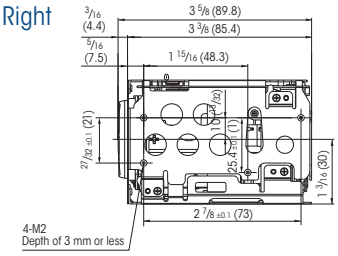

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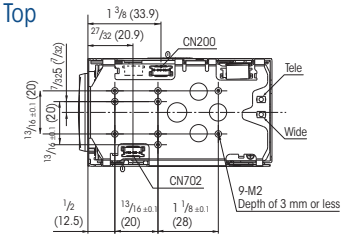

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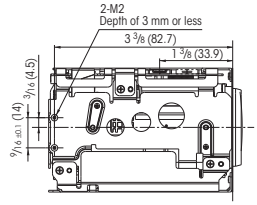

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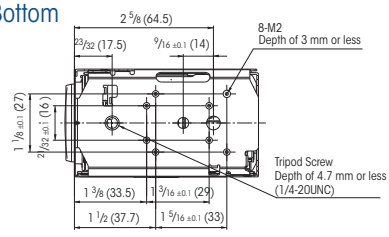

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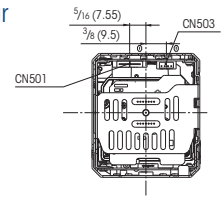
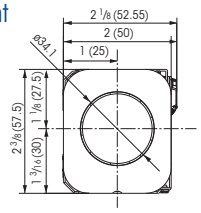


Unit: inches (mm)

FCB-EX490E/FCB-EX490EP

Front



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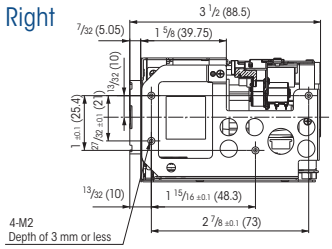

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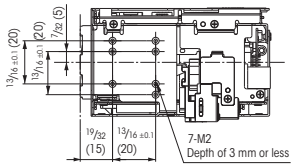

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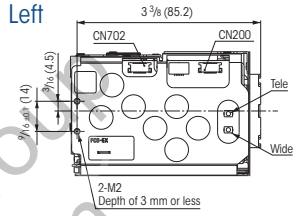

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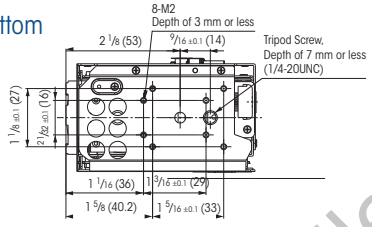

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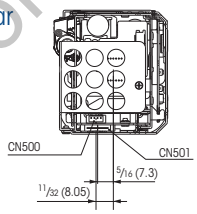
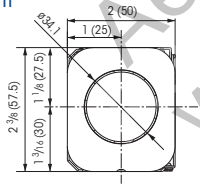


Unit: inches (mm)

FCB-EX48E/FCB-EX48EP

Front



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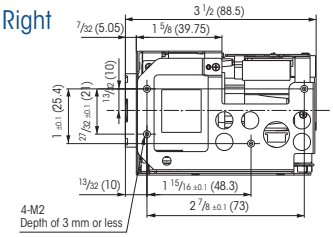

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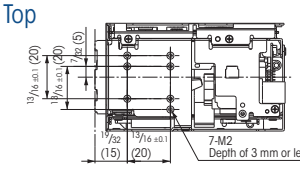

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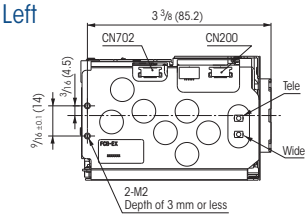

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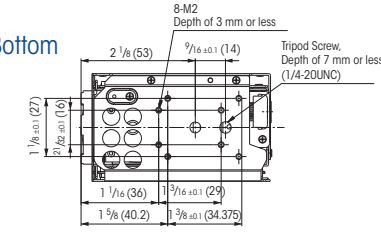

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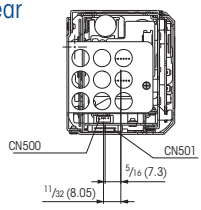

Unit: inches (mm)

SPECIFICATIONS

	FCB-EX1020	FCB-EX1020P	FCB-EX995E	FCB-EX995EP	FCB-EX985E	FCB-EX985EP	FCB-EX490E	FCB-EX490EP	FCB-EX48E	FCB-EX48EP
Signal systems	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL	NTSC	PAL
Sync systems	Internal/External (V-lock)									
Image sensor	1/4-type EXview HAD CCD (Progressive Scan)				1/4-type Super HAD CCD II (Interlace Scan)		1/4-type EXview HAD CCD (Progressive Scan)		1/4-type CCD (Interlace Scan)	
Effective picture elements	380,000 pixels (NTSC)	440,000 pixels (PAL)	380,000 pixels (NTSC)	440,000 pixels (PAL)	380,000 pixels (NTSC)	440,000 pixels (PAL)	380,000 pixels (NTSC)	440,000 pixels (PAL)	380,000 pixels (NTSC)	440,000 pixels (PAL)
Lens	36x optical zoom lens f=3.4 mm (wide) to 122.4 mm (tele) F1.6 to F4.5		28x optical zoom lens f=3.5 mm (wide) to 98.0 mm (tele) F1.35 to F3.7				18x optical zoom lens f=4.1 mm (wide) to 73.8 mm (tele) F1.4 to F3.0			
Digital zoom	12 x (432x with optical zoom)		12 x (336x with optical zoom)				12 x (216x with optical zoom)			
Minimum object distance	10 mm (wide) to 1,500 mm (tele), *Default: 320 mm		10 mm (wide) to 1,500 mm (tele) *Default: 300 mm				10 mm (wide) to 800 mm (tele), *Default: 290 mm			
Horizontal viewing angle	57.8 degrees (wide) to 1.7 degrees (tele)		55.8 degrees (wide) to 2.1 degrees (tele)				48.0 degrees (wide) to 2.8 degrees (tele)			
Horizontal resolution	550 TV lines									
Focus systems	Auto (Sensitivity: normal, low), One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF, Focus Compensation in ICR On Mode									
Minimum illumination	1.4 lx (F1.6, 50IRE)		0.65 lx (F1.35, 50IRE)		0.25 lx (F1.35, 50IRE)		0.7 lx (F1.4, 50IRE)		0.4 lx (F1.4, 50IRE)	
Video output	ANALOG VBS: 1.0 Vp-p (sync negative), Y/C DIGITAL Y/Cb/Cr 4:2:2 (comparable to ITU-R BT656)									
Camera control	VISCA (TTL signal level) Baud rate: 9.6 kbps, 19.2 kbps, 38.4 kbps Stop bit: 1/2 bit selectable									
Electronic shutter	1/1 sec to 1/10,000 sec, 22 steps									
Gain	Auto/Manual/Max. Gain Limit (-3 dB to +28 dB, 2 dB steps)									
Exposure control	Auto, Manual, Priority mode (shutter priority & iris priority), Bright, EV compensation, Slow AE									
EV compensation	Yes									
Backlight compensation	Yes									
White balance	Auto, ATW, Indoor, Outdoor, Outdoor Auto, Sodium Vapor Lamp (fix/auto), One-push, Manual									
S/N ratio	More than 50 dB									
Picture effects	E-Flip, Nega Art, Black & White, Mirror image, Color Enhancement									
Camera operation swich	Yes (Zoom Tele, Zoom Wide)									
Power requirements	DC 6.0 V to 12.0 V									
Power consumption	2.4 W (motors active: 5.1 W)		2.6 W (motors active: 5.0 W)		2.2 W (motors active: 4.6 W)		2.4 W (motors active: 4.4 W)		2.0 W (motors active: 3.1 W)	
Operating temperature	-5°C to +60°C									
Storage temperature	-20°C to +60°C									
Weight	8.1 oz (230 g)		8.4 oz (238 g)				8.1 oz (230 g)			
Dimensions (W x H x D)	2 x 2 3/8 x 3 1/2 inches (50.0 x 57.5 x 87.9 mm)		2 x 2 3/8 x 3 5/8 inches (50.0 x 57.5 x 89.8 mm)				2 x 2 3/8 x 3 1/2 inches (50.0 x 57.5 x 88.5 mm)			
Wide-D Auto mode	Yes				No		Yes		No	
Wide-D IS/PS mode	Yes				No		Yes		No	
Image Stabilization	Yes		Yes				No			
StableZoom	Yes (43x)		Yes (33x)				No			
Digital output	Yes									
Enhanced Noise Reduction	Yes									
Auto ICR	Yes								No	
Spherical Privacy Zone Masking	Yes									
Motion Detection	Yes									
Alarm	Yes									
Slow AE response	Yes (Longer than 10 minutes)									
Picture freeze	Yes									
Slow shutter	Yes									
Temperature readout	Yes									
Title display	Yes (20 characters/line, max. 11 lines)									
Camera mode display	Yes (English*/Chinese) *default									
Key switch control	Yes									
Multi-line OSD	Yes									
E-flip	Yes									
Flicker Cancel	Yes (Auto)	–	Yes (Auto)	–	Yes (Auto)	–	Yes (Auto)	–	Yes (Auto)	–