








raySHOT series Menu Tree

	SUB MENU	SUB MENU	DESCRIPTION
EDGE DET		ON/OFF	Edge detection allows you to easily adjust focus.
	BRIGHTNESS	0~20	Adjust the screen brightness. The bright control function adjusts gain, to keep a brightness level.
EXPOURE	SHUTTER	AUTO	Shutter controls exposure automatically. Shutter control has the exposure control priority
		MANUAL	Shutter speed is fixed. The exposure control priority is given to other resources.
	FLICKER	Use this function when you experience picture flicker, this happens when there is a conflict with the installed lighting frequency.	
	SENS-UP(DSS-Digital slow shutter)	OFF, X2~64	When luminance condition is low, SENS-UP can adjust the picture quality by maintaining the light level. Minimum slow shutter limit is down to x64.
	AGC	0~20	A function which controls the amplification/gain process automatically if the illumination falls under the usable level. Camera raises up gain to selected gain limit when dark conditions.
BACKLIGHT	HLC		Highlight the bright area with a masking box with a selected color. Adjust the masking level (0~20).
	BLC		Enable a back light compensation feature.
	WDR		Enable user to view both object and background more clearly when background is too bright. (LOW, MIDDLE, HIGH).
	(FRAME / ROI WDR)		
DAY&NIGHT	MODE	AUTO / COLOR / B&W / EXTERN	AUTO : Auto mode allows to switch between COLOR and B&W automatically depending on day and night. COLOR : The camera keeps color mode constantly. B&W : The camera keeps black/white mode constantly. EXTERN : In case illuminance sensor is mounted, you can switch between COLOR and B&W by its signal.(OPTION)
	IR LED(OPTION)	OFF/FULL	You can modulate brightness level of externally mounted IR LED.
	ANTI-SAT(OPTION)	0~20	In case external IR LED is used, saturated image by light can be decreased by level.
	EXTREN SW(OPTION)	LOW/HIGH	In case external illuminance sensor is mounted, you can match COLOR and B&W by level of its signal.
	D>N THRES	0~20	You can modulate illuminance point from DAY to NIGHT.
	N>D THRES	0~20	You can modulate illuminance point from NIGHT to DAY.
	DELAY	LOW/MIDDLE/HIGH	Select the checking time of light condition to confirm to change from the day mode to the night mode. When you change DAY mode to NIGHT mode, or NIGHT mode to DAY mode, converting time can change to three levels in order to avoid hunting.
COLOR	AWB	AUTO/AUTOext/ PRESET/MANUAL	AUTO : Color temperature is automatically adjusted to 3,000°K ~ 8,000°K AUTOext : Continuously adjusts camera color balance in accordance with any change in color temperature. Compensates for color temperature changes within the range of 1,900K to 11,000K. PRESET : Color temperature will be manually adjusted by pushing the OSD button. Place the white paper in front of the camera when OSD button is pressed to obtain the optimum result. Manual : Select color temperature from 3000°K, 5000°K or 8000°K.
	COLOR GAIN	0~20	Adjust the color level value for a fine color tune.
DNR	LOW/MIDDLE/HIGH		This feature will reduce the video noise at low ambient light.
IMAGE	SHARPNSS	0~10	Adjust the sharpness of the image. As you increase this value, the picture outline becomes stronger and clearer.
	GAMMA	0.45 ~ 0.75	This feature will adjust video output brightness (0.45 ~ 0.75).
	MIRROR	ON/OFF	Video output is rotated horizontally.
	FLIP	ON/OFF	Video output is rotated vertically.
	D-ZOOM	1.0X ~ 16.0X	Enlarge digitally the video output up to 16X.
	DIS	ON/OFF	Range : This function will reduce image blurriness due to vibrations caused by hand shake. The image will be digitally zoomed in to compensate the shifted pixels. Set the digital zoom level for image stabilizing. (Max. 30% : x1.4 Digital Zoom) FILTER : Select the level of correction hold filter for the worst case of image. HIGH: Less image correction. Low: More image correction. AUTO C - OFF: Disable the auto centering function. FULL: The camera will correct the blurriness due to vibrations caused by both hand shake. HALF: The camera will correct the blurriness due to vibrations caused by hand shake.:
	ACE	OFF/LOW/MIDDLE/HIGH	Brightness correction of the dark image area.
	DEFOG	ON/OFF	Auto : This feature will help increase visibility in extreme weather conditions, such as fog, rain or in a very strong luminous intensity. Manual : Set the level of defogging function (LOW, MIDDLE, HIGH).
	SHADING	ON/OFF	This feature will correct the inconsistent brightness level in the image.
	PRIVACY	ON/OFF	Mask an area you want to hide on the screen with sub menu.
	IMOTION		This feature will observe the object movement by motion zone and sensitivity that are pre-set with sub menu.
SYSTEM	COMM	CAM ID	Select the camera ID number for RS-422/485 communication.
		BAUDRATE	Set the baud rate of RS-485 communication (2400, 4800, 9600, 19200, 38400, 57600, 115200).
	OUTPUT	FRAME RATE	Change video output format.
		FREQ	Change video output frequency.
		SDI MODE	On/off
		CVBS	On/off
	IMAGE RANGE	FULL/COMP/USER	Change video image range.
	COLOR SPACE	HD-CbCr/YUV/SD-CbCr	Change video color space.
	AUDIO MIC	ON/OFF	Audio output is select.
	COLOR BAR	ON/OFF	On/off
	LANGUAGE	ENG/CHN/CHN(S)/JPN/KOR	Select the menu language.
CAM TITLE	OFF/RIGHT UP/LEFT DOWN	The camera title can be entered and it will appear over the video output.	
RESET		Reset the camera settings to the factory default.	



Precautions

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WARNING *Do not use the camera if fumes, smoke or a strange odor is emitted from the unit, or if it seems to not function correctly. Disconnect the power source immediately and consult your supplier.*
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CAUTION *Always follow the instructions in the installation guide when applying power. Fire and equipment damage can occur if power is applied incorrectly. For the correct power supply, refer to the specification sheet.*
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CAUTION *Do not install or operate in small, unventilated areas. Heat build up can significantly reduce the performance and operating life of the product and may cause a fire.*
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CAUTION *To prevent damage, do not drop the camera or subject it to strong shock or vibration.*
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CAUTION *If installed close to a TV, radio transmitter, magnet, electric motor transformer or audio speakers the magnetic field generated may interfere with or distort the image.*
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CAUTION *Whether or not the camera is used outdoors, never point it toward the sun. Use caution when operating the camera in the vicinity of spot lights or other bright lights and light reflecting objects.*
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CAUTION *Do not use the camera in extreme environments where high temperatures or high humidity exists. Use the camera under conditions where temperatures are between 14°F ~ 122°F (-10°C ~ 50°C), and humidity is below 90%.*

Specifications

SENSOR	Image Sensor	1/2.8" Progressive Sony Exmor R CMOS (Approx. 2.16 mega)	
	Scanning System	16:9 Progressive	
	Sync. System	Internal	
	Effective Pixel	1945 (H) X 1097 (V) approx.. 2.13M pixels	
	Min. Illumination	Color : 0.1 lx (1/30 sec, DSS OFF), B&W : 0.01 lx (1/30 sec DSS OFF)	
Optics	Lens	2.9mm	4.3mm
		2.9mm[140.5"(D) X 120.0"(H) X 65.1"(V)]	4.3mm[102.2"(D) X 84.3"(H) X 44.0"(V)]
Functions	EXPOSURE	BRIGHTNESS / SHUTTER / SENS-UP / AGC	
	BACKLIGHT	HLCL/BLC/WDR	
	DAY&NIGHT	AUTO / COLOR / B&W / EXTERN	
	WHITE BALANCE	AUTO (3,000°K~8,000°K) / AUTOext (1,900°K~11,000°K) / PRESET / MANUAL	
	Electronic Shutter	NTSC: 1/30~1/30000, PAL: 1/25~1/30000, SENS-UP (~X64)	
Video output	SDI (BNC)	SMPTTE 292M (1.485Gbps): 1080p@25/30, 1080i@50/60, 720p@50/60, 720p@25/30	
		SMPTTE 424M (2.97Gbps) : 1080p@50/60	
Audio Input	MIC Input	Mic Level (1Vrms). 2.5V Mic bias Audio On / Off	
CONTROL	RS422/485	2400~115200bps	
	REMOTE CONTROL	PELCO, D/P, VISCA	
General	Operation Temperature	-10°C ~ 50°C	
	Power Input	12VDC (7VDC to 15VDC)	
	Power consumption	Max 3.6W	
	Dimensions	43(W) x 43(H) x 59.1(D)mm	
	Net Weight	Approx. 380g	

raySHOT / raySHOT UltraLatency

Full-HD (3G/HD-SDI) 2.16MP Mini-Broadcast POV
Camera with 4.3mm 2MP Lens



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Features

- 2.16 Megapixel 1/2.8" Sony Exmor R CMOS Sensor
- 4.3mm Megapixel M12 Prime Lens installed (interchangeable)
- V-WFS(50/60): 1920x1080p60/50/30/25, 1920x1080i60/50, 1280x720p60/50/30/25fps
- 3G/HD-SDI (BNC) CABLE built into rear panel
- Audio Mic Stereo (TRS) input embedding
- OSD Menu Joystick, RS-422/485 connectable (PELCO/VISCA)

Dimensions

