



4K/UHD 6G-SDI POV Camera  
**UHD6G-X12L**

OPERATION GUIDE

**CAUTION:**

RISK OF ELECTRIC SHOCK.  
DO NOT OPEN.

**CAUTION:**

TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK)  
NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

**WARNING**

This symbol indicates that dangerous voltage consisting a risk of electric shock is present within this unit.

**PRECAUTION**

This exclamation point symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

**WARNING**

To prevent damage which may result in fire or electric shock hazard, do not expose this appliance to rain or moisture.

1. Be sure to use only the standard adapter that is specified in the specification sheet. Using any other adapter could cause fire, electrical shock, or damage to the product.
2. Incorrectly connecting the power supply or replacing battery may cause explosion, cause excessive heat or fire
3. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.
4. Do not place conductive objects (e.g. screw drivers, coins, metal items, etc.) or containers filled with water on top of the camera. Doing so may cause personal injury due to fire, electric shock, or falling objects.

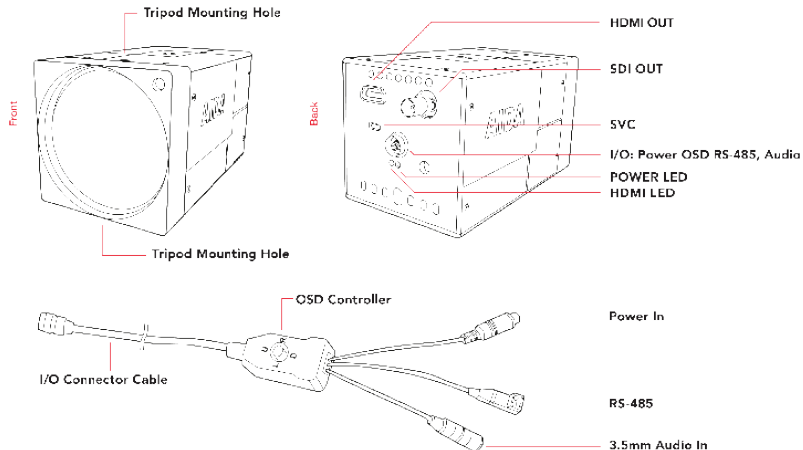
Warning continues

5. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock
6. If any unusual smells or smoke come from the unit, stop using the product. Immediately disconnect the power source and contact the service center. Continued use in such a condition may cause fire or electric shock.
7. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
8. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.

## PRECAUTION

Please read this Operation Guide before installing and using the camera & retain this copy for your reference.

1. Always follow the instructions in the operations guide when applying power. Fire and equipment damage can occur if power is applied incorrectly. For the correct power supply, refer to the specifications page.
2. Do not use camera if fumes, smoke or a strange odor is emitted from the camera, or if it seems not functional correctly. Disconnect the power source immediately and consult with your supplier.
3. Do not use the camera in extreme environments where high temperatures or high humidity exists. Use the camera under conditions where temperatures are between 32°F ~ 104°F, and humidity is below 90%.
4. 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.
5. Try to avoid fluorescent light reflections, unstable light conditions, direct pointing toward the sun. Use caution when operating the camera in the vicinity of spotlights or other bright lights and light reflecting objects.
6. To prevent damage, do not drop the camera or subject it to strong shock or vibration.



## FEATURES

- 4K UHD 1/1.7 Progressive Scan CMOS sensor capable of 4K (4092 x 2160) captures sharp and vivid images even under very low light conditions.
- Powered by a back-illuminated pixel technology.
- Superior 4K 12X optical zoom.
- Advanced digital imaging processor provides vivid and detailed images by utilizing Dynamic Range, Auto White Balance, and Noise Reduction.
- Superb motion-compensated temporal noise reduction filter for motion video without blurring.
- OSD control breakout cable with two audio inputs and RS-485 for remote communication.
- Dual video simultaneous out interfaces 6G-SDI & HDMI.
- Flawlessly relays multi-channel embedded audio via 6G-SDI & HDMI.
- Perfectly suited for broadcast, pro audio/video, and security.
- Conforming with SMPTE 292M, 424M, and 2081-10.
- Versatile, compact, and rugged design.

## OSD MENU

### MAIN MENU

*WB CONTROL	>
AE CONTROL	>
DAY /NIGHT	>
AUDIO	>
IMAGE CONTROL	>
SPECIAL	>
SETUP	>
RESET	>
EXIT	

L- Left | R- Right | U- Up | D- Down | ■- Select



1. Move the Cursor Up/Down to Choose Menu  
To move from item to item in the menu, move the joystick to the Up/Down.
2. Change the Value  
To change the value of the selected item, move the joystick to the Left/Right.
3. Shift to the Sub Menu of the Chosen Menu  
To go into sub menu, press SEL key. The menu items with > always have its sub menu.

## FOCUS CONTROL

### FOCUS CONTROL

FOCUS MODE                      AUTO  
PUSH  
ZOOM SPEED                      5      ◀ [ ] ▶  
FOCUS LIMIT                      50CM  
\*AF AREA/SIZE                      ▶  
RETURN

#### AUTO

Auto mode will adjust the exposure level automatically.

#### MANUAL

Focus control is done manually.

- PUSH : Press SEL key to focus automatically from the current view.

#### ZOOM SPEED

0 ~ 7 ( Auto mode will adjust the exposure level automatically )

#### FOCUS LIMIT

10cm, 50cm, 1m, 2m, 3m, 5m, 10m ( Focus speed can be adjusted from this menu )

**AF AREA/SIZE**      User Mode : ON, OFF

WIDTH - 0 ~ 20 ( Auto mode will adjust the exposure level automatically )

HEIGHT - 0 ~ 20 ( Auto mode will adjust the exposure level automatically )

MOVE HOR - 0 ~ 20 ( Auto mode will adjust the exposure level automatically )

MOVE VER - 0 ~ 20 ( Auto mode will adjust the exposure level automatically )

## WB CONTROL

### WHITE BALANCE

\*MODE                      ATW  
PUSH  
BLUE  
RED  
RETURN

AWB - Auto white balance mode will adjust white balance within 3,000°K ~ 8,000°K temperature.

ATW - Auto trace white mode will adjust white balance within 1,900°K ~ 11,000°K temperature.

ONE PUSH - One push mode is used if AWB or ATW cannot produce the proper white balance. Place a white paper in front of the camera when using the one push mode to self adapt.

INDOOR - Indoor mode will adjust white balance to indoor lighting conditions.



OUTDOOR - Outdoor mode will adjust white balance to outdoor lighting conditions.

MANUAL - Manual mode will adjust white balance manually.



BLUE - 0 ~ 100 ( Select blue gain within the range of 0 to 100 )

RED - 0 ~ 100 ( Select Red gain within the range of 0 to 100 )

## EXPOSURE

*AE MODE	AUTO
SHUTTER	
IRIS	
AGC	
AGC MAX	HIGH
SENS UP	OFF
AE BRIGHT	6 
IRIS SPEED	3 
FLK CONTROL	OFF
LENS MODE	INDOOR
RETURN	

## EXPOSURE

*AE MODE	SHUT FIX
SHUTTER	AUTO
IRIS	
AGC	
AGC MAX	HIGH
SENS UP	OFF
AE BRIGHT	6 
IRIS SPEED	3 
FLK CONTROL	AUTO
LENS MODE	INDOOR
RETURN	

## AUTO

Auto mode will adjust the exposure level automatically.

Detailed fine tuning options are available under this menu.

- AGC MAX : OFF, LOW, MIDDLE, HIGH, DMIN, DMID, DMAX  
"AGC MAX" sets the maximum gain value to control the video noise caused by Auto Gain Control.
- SENS UP : OFF, x2 ~ x10  
"SENS UP" mode controls the digital slow shutter to allow extra light into the camera and adjust the picture quality.
- AE BRIGHT : 0~20  
Auto Exposure brightness level can be adjusted.



## SHUT FIX

SHUT FIX mode provides more detailed shutter speed option.

All other controls are tuned for the selected shutter speed.

- SHUTTER : AUTO, 1/30 ~ 1/10,000 ( Shutter speed can be set )
- AGC MAX : OFF, LOW, MIDDLE, HIGH, DMIN, DMID, DMAX  
"AGC MAX" sets the maximum gain value to control the video noise caused by Auto Gain Control.
- SENS UP : 0~20  
"SENS UP" mode controls the digital slow shutter to allow extra light into the camera and adjust the picture quality.
- AE BRIGHT : 0~10  
Auto Exposure brightness level can be adjusted.

## EXPOSURE

*AE MODE	AGC FIX
SHUTTER	
IRIS	
AGC	AUTO
AGC MAX	HIGH
SENS UP	
AE BRIGHT	6 
IRIS SPEED	3 
FLK CONTROL	AUTO
LENS MODE	INDOOR
RETURN	

## AGC FIX

AGC FIX mode provides more detailed gain option.

All other controls are tuned for the selected gain value.

- AGC : AUTO, 0dB ~ 27dB, d2X ~ d9X  
Gain level can be set.
- AGC MAX : OFF, LOW, MIDDLE, HIGH, DMIN, DMID, DMAX  
"AGC MAX" sets the maximum gain value to control the video noise caused by Auto Gain Control.
- AE BRIGHT : 0~10  
Auto Exposure brightness level can be adjusted.
- IRIS SPEED : 0 ~ 5  
Electronic Iris speed can be controlled. ( DC Iris lens only )
- LENS MODE : INDOOR, OUTDOOR, MANUAL  
Lens setting will be optimized for the selected environment. ( DC Iris lens only )
- FLK CONTROL : AUTO, ON, OFF  
"FLK CONTROL" mode provides a proper image sensor frequency to match the power frequency in order to minimize video flicker.



## DAY & NIGHT

*MODE	DAY (COLOR)
NIGHT COLOR	OFF
COLOR BURST	OFF
RETURN	

Adjust color or B&W setting from this menu.

- MODE : DAY(COLOR), NIGHT(B&W)  
Set camera to either color mode or B&W mode.
- NIGHT COLOR : ON, OFF  
When "NIGHT COLOR" is turned ON, camera stays on color mode even "NIGHT(B&W)" is selected from the MODE.
- COLOR BURST : ON, OFF  
Color burst signal ON or OFF can be set for CVBS signal. ( Not applicable )

# AUDIO

## AUDIO

*MODE	LINE
AUDIO LEVEL	0 dB
MIC ATTENUATOR	OFF
AGC LIMIT	
SAMPLE BITS	24BITS
RETURN	

MODE : OFF, LINE, MIC

Select the proper audio mode from this menu.

AUDIO LEVEL : -12dB ~ 48dB

Audio level can be manually adjusted from this menu.

MIC ATTENUATOR : ON, OFF

Audio input attenuation can be controlled from this menu to minimize the audio noise level.

AGC LIMIT: -0dB ~ 58dB

Audio gain level can be adjusted from this menu when MIC attenuation is enabled.

SAMPLE BITS : 16, 20, 24, 32 ( Audio sample bit rate can be adjusted from this menu )

## IMAGE CONTROL

*LENS SHADING	SHUTTER	
CONTRAST	11	
BRIGHTNESS	11	
SATURATION	10	
HUE	0	
EDGE ENHANCE	5	
AUTO SATURATE	MIDDLE	
AUTO EDGE	ON	
BLACK WHITE LV		>
GAMMA CORRECT	DEFAULT	
DNR		>
RETURN		

\*0= Most Ghost Artifact | 4= Most Ghost Artifact

## IMAGE CONTROL

LENS SHADING	OFF	
*CONTRAST	11	
BRIGHTNESS	11	
SATURATION	10	
HUE	0	
EDGE ENHANCE	5	
AUTO SATURATE	MIDDLE	
AUTO EDGE	ON	
BLACK WHITE LV		>
GAMMA CORRECT	DEFAULT	
DNR		>
RETURN		

Camera image control can be adjusted from EFFECT menu.

- LENS SHADING : ON, OFF  
Optical vignetting issue can be corrected from this menu.
- BLACK LEVEL : -64 ~ 64 ( Gamma level can be adjusted )
- GAMMA CORRECT : DEFAULT, 0.4 ~ 1.0 ( Gamma level can be adjusted )
- DNR : Camera noise level can be adjusted from this menu.
  - DNR MODE : OFF, 2D, 3D, 2D+3D  
Digital noise reduction can be applied from this menu.
  - DNR LEVEL : AUTO, LOW, MIDDLE, HIGH  
Noise reduction level can be adjusted from this menu.
  - DNR APERTURE : 0 ~ 4 ( Motion artifacts tightness can be adjusted )

- CONTRAST : 0 ~ 20 ( Contrast level can be adjusted )
- BRIGHTNESS : 0 ~ 20 ( Brightness level can be adjusted )
- SATURATION : 0 ~ 20 ( Saturation level can be adjusted )
- HUE : 0 ~ 20 ( Hue level can be adjusted )
- EDGE ENHANCE : 0 ~ 20 ( Image sharpness level can be adjusted )
- AUTO SATURATE : OFF, LOW, MIDDLE, HIGH  
Decrease saturation automatically when noisy scene is detected.
- AUTO EDGE : ON, OFF  
Decrease edge enhancement (sharpness) automatically when noisy scene is detected.
- DEFAULT : See Effects menu to default value.

## SPECIAL

\*DZOOM OFF

## D-ZOOM

\*ZOOM CONTROL X 1.0 &gt;

PIP OFF

PIP SIZE 1/16 &gt;

PIP POSITION &gt;

DZOOM SAVE

DEFAULT


RETURN

Camera special functions can be adjusted from SPECIAL menu.

D ZOOM : ON, OFF ( Digital Zoom and PIP function can be enabled from this menu )

- ZOOM CONTROL : RATIO, POSITION, RETURN  
Adjust the digital zoom ratio and position.  
Use LEFT / RIGHT button to adjust the ratio, then press select.  
USE LEFT / RIGHT/ UP / DOWN button to adjust the image position, then press select.  
Press select to exit.
- PIP : ON, OFF ( Turn ON or OFF the PIP window )
- PIP SIZE : 1/16, 1/25 ( Change the size of PIP window )
- PIP POSITION : POSITION, RETURN ( Adjust the PIP window location )  
USE LEFT / RIGHT/ UP / DOWN button to adjust the image position, then press select.  
Press select to exit.
- DEFAULT : Set privacy zone to default value.

## DEFOG SETUP

\*STRENGTH 4 

THRESHOLD

AUTO LEVEL

RETURN


DEFOG : ON, OFF, AUTO ( "DEFOG" menu improves foggy image)

- STRENGTH : 0 ~ 16  
Change defog strength.
- THRESHOLD : 0 ~ 3  
Threshold value sets minimum sensitivity value for automatic defog control.  
Higher value makes defog-on control reluctant.
- AUTO LEVEL : LOW, MID, HIGH  
Auto level value sets maximum strength value for automatic defog control.  
Higher value makes defog effect to be stronger.

DWDR : Wide Dynamic range can be adjusted from the sub menu.

MOTION DETECT : Camera can detect a motion within the selected areas.

## BACKLIGHT - BLC

\*BLC ON  
 SIZE/POSITION  
 LEVEL 128   
 DISPLAY ON  
 DEFAULT  
 RETURN

BACK-LIGHT : OFF, BLC, HLM



Camera back-light compensation can be adjusted.

BLC : OFF, ON

BLC enables back light compensation.

- SIZE/POSITION : SIZE, POSITION, RETURN  
Adjust BLC area window size.
- LEVEL :  
Back-light level compensation level can be adjusted from this menu.  
Higher level will compensate more from the selected area
- DISPLAY : OFF, ON ( BLC area display can be turned ON or OFF )
- DEFAULT : Set BLC menu to default value.

## BACKLIGHT - HLM

AREA ON  
 \*AREA DISPLAY ON  
 SIZE/POSITION   
 LEVEL 3   
 BLACK MASK ON  
 DEFAULT  
 RETURN

HLM : OFF, ON

HLM can be adjusted.

- AREA DISPLAY : ON, OFF  
HLM AREA DISPLAY can be turned ON or OFF.
- SIZE/POSITION : SIZE, POSITION, RETURN  
Adjust BLC area window size.
- LEVEL : 0 ~ 20  
Amount of masking area can be adjusted.
- BLACK MASK : OFF, ON  
Masking area highlight can be turned ON or OFF.
- DEFAULT : Set HLM menu to default value.

## DEFECT PIXEL

*STATIC PROGRESS	PRESS OK
SDPC UPDATE	PRESS OK
SDPC CLEAR	PRESS OK
RETURN	

BINNING : OFF, ON

Binning can be turned ON or OFF.

DEFECT PIXEL : OFF, ON, ON (FIXED), STATIC

Defective Pixel Correction feature can be operated. It is turned ON by default and will run both dynamic and static DPC function.

## DISPLAY FUNCTION

*FREEZE	OFF
MIRROR	MIRROR
IMAGE EFFECT	NEGATIVE
ROTATION	ROT
PICTURE STYLE	VIVID
RETURN	

DISPLAY FUNCTION : OFF, ON ( Adjust image display features from this menu )

- FREEZE : OFF, ON

Image freeze can be turned ON or OFF.

- MIRROR : OFF, MIRROR, V-FLIP, BOTH(H/V) Image mirror or flip can be operated.
- IMAGE EFFECT : OFF, NEGATIVE, GREY MODE, REDDISH-1 ~ 4, BLUISH-1 ~ 4, GREENISH-1 ~ 4. ROTATION : OFF, ROT\_L 1:1

Several color effects can be applied.

- ROTATION : OFF, ROT\_L FULL, ROT\_L 1:1, ROT\_R Full, ROT\_R 1:1

Image can be rotated either left or right side.

- PICTURE STYLE : OFF, STANDARD, VIVID, CLEAR, VIVID CLEAR, NEUTRAL

Different types of picture style can be applied.

FLICKER DETECT : OFF, ON

"FLICKER DETECT" mode provides a proper image sensor frequency to match the power frequency in order to minimize video flicker.

## PRIVACY MASK

*MODE	ON
TYPE	SQUARE
MASK NO.	MASK 1
DISPLAY	ON
COLOR	BLACK
POLY PIXEL	
POSITION-X	2
POSITION-Y	5
SIZE-X	20
SIZE-Y	11
DEFAULT	
RETURN	

Privacy zone can be setup from this menu.

MODE : ON, OFF

Enable "PRIVACY ZONE" ON or OFF.

TYPE : SQUARE, POLYGON

Select privacy zone shape.

MASK NO : MASK1 ~ MASK8

Select privacy zone mask number.

DISPLAY : ON, OFF

Turn ON or OFF the selected privacy mask zone.

COLOR : WHITE, GREEN, BLUE, RED, CYAN, MAGENTA, YELLOW, GRAY-1 ~ 6, MOSAIC, BLACK. ( Select privacy zone mask color )

POLY SELECT : L- TOPP, L- BOTTOM, R- TOP, R-BOTTOM

Change the shape of the polygon by selecting the corner of the polygon.

POSITION-X & POSITION-Y

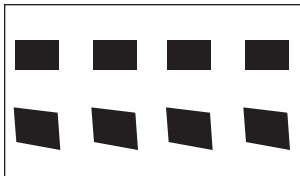
Change the size of the selected corner from "POLY SELECT" menu.

SIZE-X & SIZE-Y

Change the size of the privacy square.

DEFAULT

Set privacy zone to default value.



## SETUP

*CAM TITLE	OFF	
RS485		>
MENU COLOR		>
FACTORY RESET		>
SYSTEM INFO		>
OUTPUT FORMAT	1080P60	>
RETURN		

Camera setup can be adjusted from this menu.

CAM TITLE : OFF, ON

Camera title can be turned ON or OFF.

COMMUNICATION : ON, OFF, AUTO

VISCA communication control can be adjusted.

- CAM ID : 0 ~ 7  
Camera ID can be setup.
- ID DISPLAY : OFF, ON  
Camera ID can be setup.
- BAUDRATE : 2400, 4800, 9600, 19200, 38400  
Camera baudrate can be set.

SYSTEM INFO : ON, OFF, AUTO

Camera information can be found under this menu.

OUTPUT FORMAT : ON, OFF, AUTO

Camera resolution and frame rate can be set

Supported formats are:	4K2160P - 30 / 29.97	1080P - 60 / 59.94	1080I - 60 / 59.94 / 50
* 1080p by default	25 / 24	50 30/ 29.97 / 25 / 24	720P - 60 / 59.94 / 50

### RESET

\*MODE      FACTORY

RESET

SYSTEM INFO

SAVE AS USER

RETURN

MODE : FACTORY, USER

Camera will reset to factory default or user saved value.

RESET :

Reset the camera to the selected mode.

SAVE AS USER :

Save the user desired setting from the menu. Mode must be set to User.



## VIDEO

Image Sensor	1/1.7" inch Progressive CMOS
Sensor Size	Diagonal 9.93 mm (17:9)
Effective Pixels	Horizontal: 4096, Vertical: 2160
Pixel Size	1.85 $\mu$ m x 1.85 $\mu$ m
Resolution	4096 x 2160, 3840 x 2160, 1920 x 1080, 1280 x 720
Resolution Rate	4K (4096 X 2160) 30/29/25/24p 2160 30/29.97/25/24p 1080p 60/59.94/50/30/29.97/25p/24p 1080i 60/59.94/50i 720 60/59.94/50/30/25p
Output	HDMI 1.4 HD/3G/6G-SDI (BNC)
Color Space	4:2:2 (YCbCr) 10bit

## FUNCTION

White Balance	AWB / AE / AF
Exposure	Full Auto, Bright, Shutter Priority, Iris Priority, Manual
Other	WDR, DIS (Digital Image Stabilization), 2D/3D Noise Reduction, Digital Slow Shutter, Black Level Compensation, Flicker Detection.

## LENS

Lens	12X UHD Optical Zoom Lens, 4.2mm/82° (Wide) ~ 50.04mm/8° (Tele), F1.8 (Wide) - F2.8 (Tele)
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## AUDIO INPUT

Input	3.5mm TRS Stereo Mic-in & Line in over I/O Cable
Sample Rate	16/24/32 Bits

## STANDARD

SMPTE	SMPTE 292M, SMPTE 424M, SMPTE 2081-10
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## PHYSICAL

Camera Control	RS-485, OSD Button
Operation Temp	15° F - 120° F
Dimension	90.20mm x 90.20mm x 156.70mm / 3.55" x 3.55" x 6.17"
Weight	600g / 1.2lbs
Power	12VDC (+9 - +15VDC)

\*Specification are subject to change without notice.

Visit us:

[www.aidaimaging.com/support](http://www.aidaimaging.com/support)

E-mail us:

[support@aidaimaging.com](mailto:support@aidaimaging.com)

Give us a Call:

Toll Free: 844.631.8367 | Tel: 909.333.7421

Operating Hours: Mon-Fri | 8:00am – 5:00pm PST

# AIDA

IMAGING



가자채 영상(무탈영) : POV Camera  
인증번호 : R-R-aID-HO-100A  
인증 받은 자의 상호 : (주)에이치올리스텍  
제조년월 :  
제조지/제조국가 : (주)에이치올리스텍 / 한국



#### Disposal of Old Appliances

1. When this crossed-out wheel bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC.
2. All electrical and electronic products should be disposed of separately from the municipal waste stream in accordance to laws designated by the government or the local authorities.
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

