



4K HDMI POV Camera

**UHD-X3L**

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.

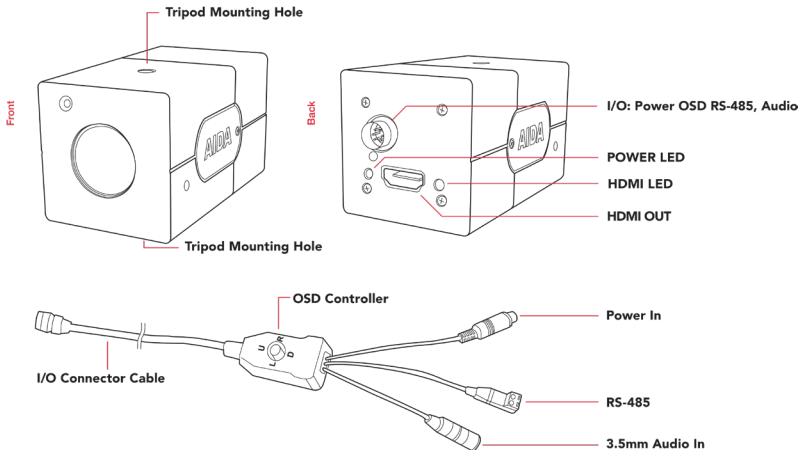
Warning continues

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 1/2.5 Progressive Scan CMOS sensor captures sharp and vivid UHD video even under low light conditions.
- X3 optical zoom features 25° ~ 78° wide angle of view.
- Built-in zoom lens offers zoom, focus and iris control.
- 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 power input and RS-485 for remote communication.
- Perfectly suited for huddle room, broadcast, pro audio/video, and security.
- Versatile, compact, and rugged design.

## OSD MENU

### MAIN MENU

*FOCUS CONTROL	>
WB CONTROL	>
AE CONTROL	>
COLOR/ B/W	>
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 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 ).

## 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



## 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.

## 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	

## 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.

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	
DEFOG	OFF	
DIS	OFF	
BACKLIGHT	OFF	
BINNING	OFF	
DEFECT PIXEL	ON	>
DISP. FUNCTION		>
FLICKER DETECT	OFF	
PRIVACY		>
HDMI MODE	RGB444.709	
RETURN		

## D-ZOOM

*ZOOM CONTROL	X 1.0	>
PIP	OFF	
PIP SIZE	1/16	
PIP POSITION		>
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

## BACKLIGHT - BLC

\*BLC ON 

SIZE/POSITION

LEVEL 128 

DISPLAY ON

DEFAULT

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.

**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	◀ [Progress Bar] ▶
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**

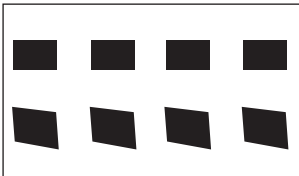
Change the size of the selected corner from "POLY SELECT" menu.

**SIZE-X & SIZE-Y**

Change the size of the privacy square.

**DEFAULT**

Set privacy zone to default value.







### 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.

## SPECIFICATION

### VIDEO

<b>Image Sensor</b>	1/2.5" inch Progressive CMOS
<b>Sensor Size</b>	Diagonal 7.20mm
<b>Effective Pixels</b>	Horizontal: 3840, Vertical: 2160
<b>Pixel Size</b>	1.62 $\mu$ m x 1.62 $\mu$ m
<b>Resolution</b>	2160p: 3840 x 2160/ 1080p 1080i : 1920 x 1080 / 720p : 1280 x 720
<b>Resolution Rate</b>	4K2160p : 30 / 29.97 / 25 / 24 1080p : 60 / 59.94 / 50 / 30 / 29.97 / 25 / 24 1080i : 60 / 59.94 / 50 720p : 60 / 59.94 / 50
<b>Output</b>	HDMI 1.4
<b>Color Space</b>	4:2:2 (YCbCr) 10bit

### FUNCTION

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

### LENS

<b>Lens</b>	3X Optical Zoom Lens, 3.85mm/78° (Wide) ~ 13.4mm/25° (Tele)
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### STANDARD

<b>SMPTE</b>	SMPTE 292M, SMPTE 424M, SMPTE 2081-10
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### PHYSICAL

<b>Camera Control</b>	RS-485, OSD Button
<b>Operation Temp</b>	32° F - 104° F
<b>Dimension</b>	48mm x 48mm x 83.09mm / 1.89" x 1.89" x 3.27"
<b>Weight</b>	140g / 0.30lbs
<b>Power</b>	12VDC (+9 - +15VDC)

*\*Specification are subject to change without notice.*

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**Give us a Call:**

Toll Free: 844.631.8367 | Tel: 909.333.7421

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

# AIDA

IMAGING



#### 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.