AIDA
IMAGING

UHD-100
Micro UHD HDMI POV Camera

Operation Guide
Ver. 1.1 / MAR 2018

	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, fire, electric shock, or damage to the product.
3. Do not connect multiple cameras to a single adapter. Exceeding the capacity may cause excessive heat or fire.
4. Securely plug the power cord into the power receptacle. Insecure connection may cause fire.

5. When installing the camera, fasten it securely and firmly. A falling camera may cause personal injury.
6. 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.
7. Do not install the unit in humid, dusty, or sooty locations. Doing so may cause fire or electric shock.
8. 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.
9. If this product fails to operate normally, contact the nearest service center. Never disassemble or modify this product in any way.
10. When cleaning, do not spray water directly onto parts of the product. Doing so may cause fire or electric shock.
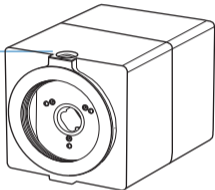
Precaution

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.
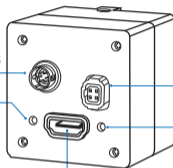
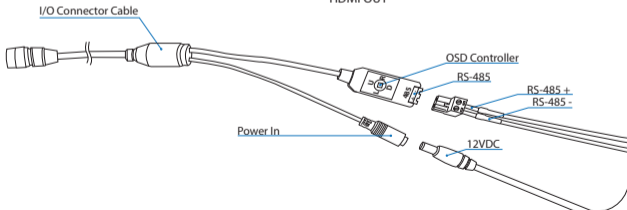FRONT

REAR

Tripod Mounting Hole

Power, RS-485

POWER LED

AUTO IRIS Lens Connector

HDMI LED

HDMI OUT

I/O Connector Cable

OSD Controller
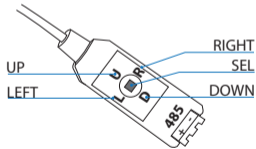
RS-485

RS-485 +
RS-485 -

Power In

12VDC

- 4K UHD 1/2.5 Progressive Scan CMOS sensor captures sharp and vivid UHD video even under very low light conditions.
- 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 audio input and RS-485 for remote communication.
- Interchangeable lens design compatible with CS and C mount lenses.
- Perfectly suited for broadcast, pro audio/video, and security.
- Conforming with SMPTE 292M, 424M and 2081-10.
- Versatile, compact, and rugged design.

```
   MAIN MENU

 ★ EXPOSURE        >
   WHITE BALANCE   >
   DAY & NIGHT     >
   DNR             >
   PRIVACY         >
   EFFECT          >
   SPECIAL         >
   SETUP           >
   EXIT
```

❶ Move the Cursor Up/Down to Choose Menu

To move from item to item in the menu, move the joystick to the Up/Down.

❷ Change the Value

To change the value of the selected item, move the joystick to the Left/Right.

❸ 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.

```
        EXPOSURE
 ★ AE MODE        AUTO
    SHUTTER
    IRIS
    AGC
    AGC MAX       HIGH
    SENS UP       OFF
    AE BRIGHT     6    ◁──────
    IRIS SPEED    3    ◁──────
    LENS MODE     INDOOR
    FLK CONTROL   AUTO
    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   ▭▭▭
      LENS MODE      INDOOR
      FLK CONTROL    AUTO
      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** : 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** : 0~10
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   ▭
    LENS MODE    INDOOR
    FLK CONTROL  AUTO
    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.

```
    EXPOSURE

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

> 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.

```
     WHITE BALANCE
 ★ MODE           ATW
   PUSH
   BLUE
   RED
   SPEED          6    ▉▉▉▉▉▉▉▉
   OFFSET-B       52   ▉▉▉▉▉▉▉▉
   OFFSET-R       54   ▉▉▉▉▉▉▉▉
   RETURN
```

```
     WHITE BALANCE
 ★ MODE           ONE PUSH
   PUSH           PRESS OK
   BLUE
   RED
   SPEED
   OFFSET-B       52   ▉▉▉▉▉▉▉▉
   OFFSET-R       54   ▉▉▉▉▉▉▉▉
   RETURN
```

ATW

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

➤**SPEED** : 0 ~ 7

White balance adjust speed can be adjusted.

➤**OFFSET-B** : 0 ~ 100

"OFFSET-B" adjusts Blue gain within the range of 0 to 100.

➤**OFFSET-R** : 0 ~ 100

"OFFSET-R" adjusts Red gain within the range of 0 to 100.

ONE PUSH

"ONE PUSH" mode is used if "ATW" cannot produce the proper white balance.

➤PUSH

Press Select button to enable "ONE PUSH" white balance adjustment. Place a white paper in front of the camera when using the "ONE PUSH" mode to self-adopt.

Camera provides a wide range of white balance options. Check your color temperature before adjusting this mode.

```
    WHITE BALANCE
 * MODE          INDOOR
   PUSH
   BLUE
   RED
   SPEED         6  ◁━━━▷
   OFFSET-B      52 ◁━━━▷
   OFFSET-R      54 ◁━━━▷
   RETURN
```

INDOOR
"INDOOR" mode will adjust white balance to indoor lighting condition.

OUTDOOR
"OUTDOOR" mode will adjust white balance to outdoor lighting condition.

```
    WHITE BALANCE
 * MODE          MANUAL
   PUSH
   BLUE          50 ◁━━━▷
   RED           50 ◁━━━▷
   SPEED
   OFFSET-B
   OFFSET-R
   RETURN
```

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.

Adjust color or B&W setting from this menu.

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

> 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)

```
   NOISE REDUCTION
 * MODE          2D + 3D
   DNR LEVEL      AUTO
   DNR APERTURE   2
   RETURN
```

NOISE REDUCTION

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.*
> *0 = Most ghost artifact 4 = Least ghost artifact*

```
PRIVACY MASK
  * MODE          ON
    TYPE          SQUARE
    MASK NO.      MASK 1
    DISPLAY       ON
    POLY SELECT   WHITE
    POSITION-X    L-TOP
    POSITION-Y    22
    SIZE-X        38
    SIZE-Y
    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-TOP, 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.

```
EFFECT
LENS SHADING       ON
★ GAMMA CORRECT    ON         >
CONTRAST           11
BRIGHTNESS         11
SATURATION         12
HUE                10
EDGE ENHANCE       5
AUTO SATURATION    MIDDLE
AUTO EDGE          ON
DEFAULT
RETURN
```

```
GAMMA CORRECTION OPTION
★ FRONT GM EN      DEFAULT
REAR GM EN
REAR GM INV        DEFUALT
BAY LUT EXTEND     UNIFORM
RGB LUT EXTEND     UNIFORM
Y LUT EXTEND       UNIFORM
BYLUT XSAMPLE      64x256LUT
RGBLUT XSAMPLE     64x256LUT
RETURN
```

Camera image control can be adjusted from EFFECT menu.

> **LENS SHADING** : ON, OFF
Optical vignetting issue can be corrected from this menu.

> **GAMMA CORRECT**: ON, OFF(1.0)
Gamma level can be adjusted.

> > **FRONT GM EN**: DEFAULT, OFF-BYPASS, 0.9 ~ 0.4, CUSTOM
CMOS sensor gamma level can be adjusted.

> > **REAR GM INV**: DEFAULT, OFF, 0.9 ~ 0.4, CUSTOM
Output gamma level can be adjusted.

> > **Y LUT EXTEND**: UNIFORM, EXTEND-F2C
Tuning and engineering purpose LUT correction.

> > **BYLUT XSAMPLE**: 64x256LUT, 32x256LUT, 64x256LUT, 128x256LUT, 256x256LUT
Tuning and engineering purpose LUT correction.

> > **RGBLUT XSAMPLE**: 64x256LUT, 32x256LUT, 64x256LUT, 128x256LUT, 256x256LUT
Tuning and engineering purpose LUT correction.

```
    EFFECT
    LENS SHADING      ON
    GAMMA CORRECT     ON            >
  * CONTRAST          11  ⬜⬜⬜▶
    BRIGHTNESS        11  ⬜⬜⬜▶
    SATURATION        12  ⬜⬜⬜▶
    HUE               10  ⬜⬜⬜▶
    EDGE ENHANCE      5   ⬜▶
    AUTO SATURATION   MIDDLE
    AUTO EDGE         ON
    DEFAULT
    RETURN
```

➤**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**
Set EFFECT menu to default value.

```
         SPECIAL
  ★ DZOOM          ON        >
    DEFOG          OFF
    DIS
    BACKLIGHT      OFF
    BINNING        OFF
    DEFECT PIXEL   ON        >
    DISP. FUNCTION
    FLICKER DETECT
    RETURN
```

```
         D-ZOOM
  ★ ZOOM CONTROL            >
    PIP            ON
    PIP SIZE       1/16
    PIP POSITION
    DEFAULT
    RETURN
```

Camera special functions can be adjusted from SPECIAL menu.

DZOOM : 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
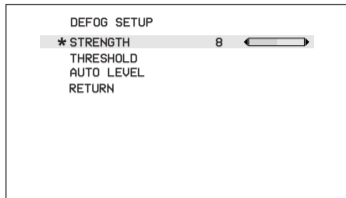*Change the size of PIP window.*

>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        8  ▭▭▭▭▭▭
   THRESHOLD
   AUTO LEVEL
   RETURN
```

```
   BACKLIGHT - BLC
 * BLC             ON
   SIZE/POSITION              >
   DISPLAY         ON
   DEFAULT
   RETURN
```

DEFOG : ON, OFF, AUTO
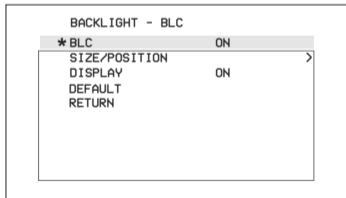*"DEFOG" menu improves foggy image.*

>**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.

DIS : ON, OFF
Digital image stabilization can be turned ON or OFF.

BACKLIGHT : OFF, BLC, HLM
Camera backlight compensation can be adjusted.

BLC : OFF, ON
BLC enables back light compensation.
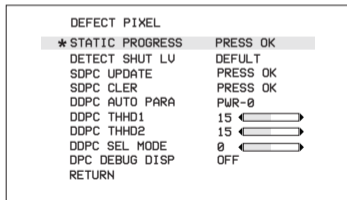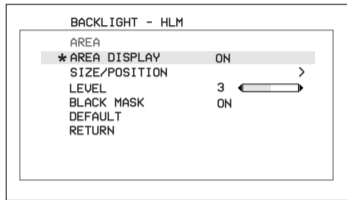
>**SIZE/POSITION** : SIZE, POSITION, RETURN
Adjust BLC area window size.

>**DISPLAY** : OFF, ON
BLC area display can be turned ON or OFF.

>**DEFAULT**
Set BLC menu to default value.

```
    BACKLIGHT - HLM

    AREA
  * AREA DISPLAY      ON
    SIZE/POSITION               >
    LEVEL             3  [====]
    BLACK MASK        ON
    DEFAULT
    RETURN
```

```
    DEFECT PIXEL

  * STATIC PROGRESS   PRESS OK
    DETECT SHUT LV    DEFULT
    SDPC UPDATE       PRESS OK
    SDPC CLER         PRESS OK
    DDPC AUTO PARA    PWR-0
    DDPC THHD1        15  [====]
    DDPC THHD2        15  [====]
    DDPC SEL MODE     0   [==]
    DPC DEBUG DISP    OFF
    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.

BINNING : OFF, ON
Binning can be turned ON of 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
```

```
SPECIAL
  DZOOM
  DEFOG           OFF
  DIS
  BACKLIGHT       OFF
  BINNING
  DEFECT PIXEL    OFF        >
  DISP. FUNCTION  RT    ZOOM
★ FLICKER DETECT  ON
  RETURN
```

DISPLAY FUNCTION
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.
  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.

```
  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.

>RS-485
VISCA communication control can be adjusted.

>**CAM ID**: 0 ~ 7
Camera ID can be setup.

>**ID DISPLAY**: OFF, ON
Camera ID can be displayed.

>**BAUDRATE**: 2400, 4800, 9600, 19200, 38400
Camera baudrate can be set.

>MENU COLOR
OSD menu color can be adjusted.

>SYSTEM INFO
Camera information can be found under this menu.

>OUTPUT FORMAT
Camera resolution and frame rate can be set.
Supported formats are:

4K2160P	*30 / 29.97 / 25 / 24*
720P	*60 / 59.94 / 50*
1080i	*60 / 59.94 / 50*
1080P	*60 / 59.94 / 50 / 30 / 29.97 / 25 / 24*

Image Sensor	1/2.5 inch Progressive CMOS
Sensor Size	Diagnal 7.20mm
Effective Pixels	Horizontal: 3840, Vertical: 2202
Pixel Size	1.62 µm (H) x 1.62 µm (V)
Sync System	Internal Sync.
Resolution	2160p : 3840 x 2160 1080p / 1080i : 1920 x 1080 720p : 1280 x 720
Minimum Illumination	0.2Lux (Day), 0.05Lux(Night)
Frame Rate	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
Video Signal Output	HDMI 1.4
White Balance	Auto & Manual (1,900°K~11,000°K)
Lens Mount	C / CS Mount
Synchronization	-
Audio Input	-
Audio Sample Rate	-
Color Space	4:2:2(YCbCr) 10bit
Other Features	Digital Zoom, DNR, GAMMA CORRECT
Camera Control	OSD Control Button / via RS-485
Operation Temperature	32°F - 104°F
Dimension & Weight	38mm x 38mm x 65mm / 1.49" x 1.49" x 2.55"
Power Requirements	12VDC (+9 - +15VDC)

Specifications are subject to change without notice

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IMAGING