

# CCK30662AF

## 1/2.8" High Sensitivity 2M CMOS x30 Zoom/AF Camera Module



### ■ Overview

- 2M camera module equipped with SONY Startvis2 color image sensor.
- Equipped with 1/2.8" 30x optical zoom lens for 2M.
- Adoption of compact size housing.

### ■ Feature

- Near-infrared sensitivity is greatly improved compared to conventional sensors, and when combined with near-infrared light, surveillance images at night become clearer.
- Supports auto ICR operation, automatically switching from daytime color images to nighttime near-infrared images.
- Due to Binning mode, the maximum sensitivity is more than doubled compared to Normal.
- 30x optical zoom and 15x digital zoom for a total of 450x zoom.
- Equipped with auto iris, auto electronic shutter, auto gain, auto white balance, and auto focus.
- Equipped with various correction functions according to the image scene (DNR, WDR, fog, heat haze, etc.).
- Supports TMDS output and easily converts to HDMI.
- Supports EX-SDI/3G-SDI/HD-SDI output, enabling long-distance wiring up to 400m without image quality degradation.
- Supports 1080p, 1080i, 720p video formats.
- Flexible support for additional functions.

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## ■ Specifications

|          |                           |                                                                                                                                                                                                                                                                                                    |
|----------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Sensor   | Image Sensor              | 1/2.8" SONY CMOS Image Sensor (IMX662-AAQR1) Starvis2 for NIR                                                                                                                                                                                                                                      |
|          | Number of pixels          | 1936(H) x 1120(V), 2.13M Pixels                                                                                                                                                                                                                                                                    |
|          | Pixel Size                | 2.9 $\mu$ m(H) x 2.9 $\mu$ m(V)                                                                                                                                                                                                                                                                    |
|          | Scan Format               | 1920x1080@60/50/30/25fps<br>(Option 1920x1080@59.94/29.97fps)                                                                                                                                                                                                                                      |
| Lens     | F No.                     | Wide: F1.6, Tele: F4.4                                                                                                                                                                                                                                                                             |
|          | Focal Length              | Wide (x1) : 4.5mm, Tele (x30) : 135mm                                                                                                                                                                                                                                                              |
|          | Zoom                      | Optical Zoom 1~30times : Stepping Moter<br>Digital Zoom 1~15 times : (Optical + Digital Zoom Max : 450 times)                                                                                                                                                                                      |
|          | Focus                     | Stepping motor system auto focus<br>Focus range : Wide 1.5m~ $\infty$ , Tele 1.5m~ $\infty$                                                                                                                                                                                                        |
|          | Optical Arange of view    | Wide (x1) : D/61.7° , H/56.8° , V/32.8°<br>Tele (x30) : D/2.5° , H/2.2° , V/1.2°                                                                                                                                                                                                                   |
|          | Optical Filter            | 1: IR Cut Filter (for Day Color)<br>2: Through Glass                                                                                                                                                                                                                                               |
| Video    | Video Format              | TMDS : 1080p60/59/50/30/29/25, 1080i60/59/50, 1080PsF30/29/25, 720p60/59/50/30/29/25<br>EX-SDI : 1080p60/59/50/30/29/25, 1080i60/59/50, 1080PsF30/29/25, 720p60/59/50/30/29/25<br>3G-SDI : 1080p60/59/50 (Option)<br>HD-SDI : 1080p30/29/25, 1080i60/59/50, 1080PsF30/29/25, 720p60/59/50/30/29/25 |
|          | Minimum Illumination      | F1.5, Color 0.01 lx, B/W 0.005 lx, IR Cut Filter Off, AGC 42dB, 25IRE                                                                                                                                                                                                                              |
|          | Signal to Noise Ratio     | STD 52dB (Minimum 48dB)                                                                                                                                                                                                                                                                            |
| Function | Setting                   | OSD, UART(2ch)                                                                                                                                                                                                                                                                                     |
|          | Auto Iris                 | Yes                                                                                                                                                                                                                                                                                                |
|          | Auto Exposure             | Yes                                                                                                                                                                                                                                                                                                |
|          | Auto Focus                | Yes                                                                                                                                                                                                                                                                                                |
|          | White Balance             | Auto / Manual / Preset (One push)                                                                                                                                                                                                                                                                  |
|          | Manual Shutter            | 30fps : 1/30, 1/60, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/15000, 1/30000<br>25fps : 1/25, 1/50, 1/100, 1/200, 1/400, 1/800, 1/1600, 1/3200, 1/6400, 1/12800, 1/25600                                                                                                              |
|          | Sense Up                  | AGC Max 72dB & Slow Shutter Max 256 times.                                                                                                                                                                                                                                                         |
|          | Day & Night Mode          | Color / B&W / Auto / External                                                                                                                                                                                                                                                                      |
|          | Digital Noise Reduction   | Yes                                                                                                                                                                                                                                                                                                |
|          | Backlight Control         | Yes                                                                                                                                                                                                                                                                                                |
|          | Peak / Average Control    | Yes                                                                                                                                                                                                                                                                                                |
|          | Gamma Control             | 0.35 / 0.45 / 0.55 / 0.65 / 0.75 / 0.85 / 0.95 / Defog(L) / Defog(M) / Defog(H)                                                                                                                                                                                                                    |
|          | Wide Dynamic Range        | Yes                                                                                                                                                                                                                                                                                                |
|          | Eclipse (High Light Clip) | Yes                                                                                                                                                                                                                                                                                                |
|          | Fog Reduction             | Yes                                                                                                                                                                                                                                                                                                |
|          | Heat Haze Correction      | Yes                                                                                                                                                                                                                                                                                                |
|          | Motion Detection          | Yes                                                                                                                                                                                                                                                                                                |
|          | H/V Mirror, Flip          | Yes                                                                                                                                                                                                                                                                                                |
|          | OSD Language              | English, Japanese, Korean, Chinese(Traditional), Chinese(Simplified)                                                                                                                                                                                                                               |
|          | Title Display             | Yes                                                                                                                                                                                                                                                                                                |
| General  | Communication Protocol    | GCC-CP / Pelco-D / Pelco-P / VISCA                                                                                                                                                                                                                                                                 |
|          | Privacy Mask              | Yes (16 Masks)                                                                                                                                                                                                                                                                                     |
|          | Preset Position           | Yes (64 Area)                                                                                                                                                                                                                                                                                      |
|          | Synchronous Mode          | Internal                                                                                                                                                                                                                                                                                           |
|          | Power Source              | DC+12V                                                                                                                                                                                                                                                                                             |
|          | Consumption Current       | 250mA (30fps)                                                                                                                                                                                                                                                                                      |
|          | Operation Temperature     | -10°C ~ +50°C                                                                                                                                                                                                                                                                                      |
|          | Storage Temperature       | -30°C ~ +70°C                                                                                                                                                                                                                                                                                      |
|          | Humidity                  | 80% Max                                                                                                                                                                                                                                                                                            |
|          | Outside Dimensions        | W48.8mm x H55.0mm x D93.1mm                                                                                                                                                                                                                                                                        |
|          | Net Weight                | 230g                                                                                                                                                                                                                                                                                               |

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## ■ Pin Assignment

| JP401/901 (USL00-30L-A/KEL) |                 |                           |
|-----------------------------|-----------------|---------------------------|
| 1                           | GND in          | Ground                    |
| 2                           | TXCLKout-       | TMDS Clock-               |
| 3                           | TXCLKout+       | TMDS Clock+               |
| 4                           | GND in          | Ground                    |
| 5                           | TXout0-         | TMDS TX0-                 |
| 6                           | TXout0+         | TMDS TX0+                 |
| 7                           | GND in          | Ground                    |
| 8                           | TXout1-         | TMDS TX1-                 |
| 9                           | TXout1+         | TMDS TX1+                 |
| 10                          | GND in          | Ground                    |
| 11                          | TXout2-         | TMDS TX2-                 |
| 12                          | TXout2+         | TMDS TX2+                 |
| 13                          | GND in          | Ground                    |
| 14                          | 485EN1          | UART1 RS485 Enable output |
| 15                          |                 | Reserved                  |
| 16                          |                 | Reserved                  |
| 17                          | Hot Plug Detect | 5V out, Open:stop         |
| 18                          | +5V Power       | 5V DC output              |
| 19                          |                 | Reserved                  |
| 20                          | GND in          | Ground                    |
| 21                          | I2CSCL          | I2C Serial Clock          |
| 22                          | I2CSDA          | I2C Serial Data           |
| 23                          | GND in          | Ground                    |
| 24                          | RX1             | UART1 RX input            |
| 25                          | TX1             | UART1 TX output           |
| 26                          | RESET           | 12V DC input              |
| 27                          | T12V in         | 12V DC input              |
| 28                          | T12V in         | 12V DC input              |
| 29                          | T12V in         | 12V DC input              |
| 30                          | T12V in         | 12V DC input              |

| JP104/604 (53261-0671/MOLEX) |        |              |
|------------------------------|--------|--------------|
| 1                            | DC12in | 12V DC       |
| 2                            | GND    | Power Ground |
| 3                            | DC12in | 12V DC       |
| 4                            | GND    | Power Ground |
| 5                            | IRext  | ICR Control  |
| 6                            |        | Reserved     |

| JP105/605 (SM06B-SRSS-TB/JST) |       |                |
|-------------------------------|-------|----------------|
| 1                             | ENTER | OSD Enter      |
| 2                             | RIGHT | OSD Right/Tele |
| 3                             | LEFT  | OSD Left/Wide  |
| 4                             | UP    | OSD Up/Near    |
| 5                             | DOWN  | OSD Down/Far   |
| 6                             | GND   | Ground         |

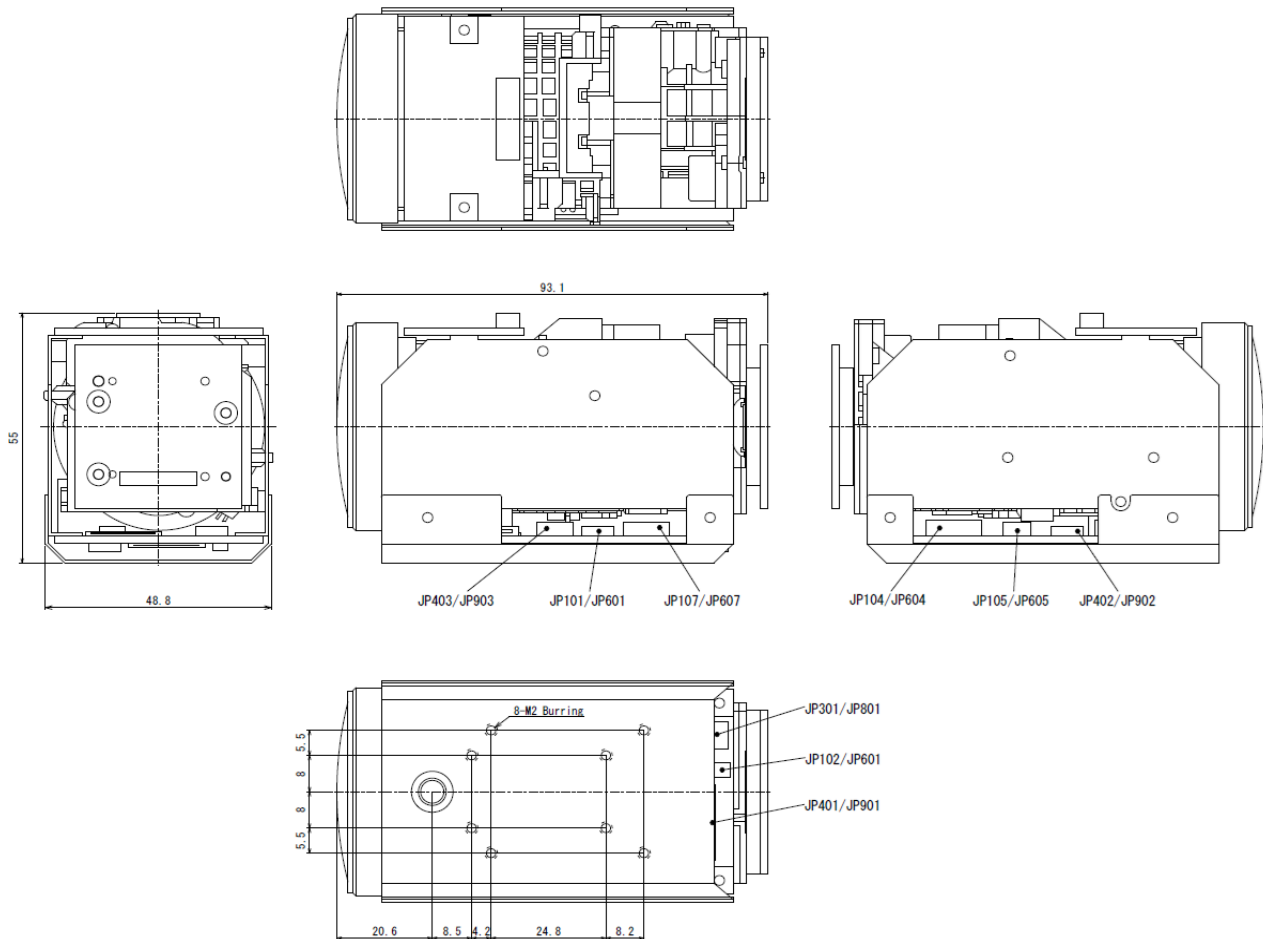
| JP107/607 (SM05B-SRSS-TB/JST) |         |                     |
|-------------------------------|---------|---------------------|
| 1                             | GND     | Ground              |
| 2                             | TX2     | UART TX (3.3V)      |
| 3                             | RX2     | UART RX (3.3V)      |
| 4                             | DC33out | 3.3V DC             |
| 5                             | 485EN2  | RS485 Enable (3.3V) |

| JP102/602 (AYU1-1P-02676-120/JST) |        |              |
|-----------------------------------|--------|--------------|
| 1                                 | EX-SDI | EX-SDI TX    |
| 2                                 | GND    | Video Ground |

| JP301/801 (SM04B-SRSS-TB/JST) |         |         |
|-------------------------------|---------|---------|
| 1                             | DC33out | 3.3V DC |
| 2                             | ARin    | Audio R |
| 3                             | ALin    | Audio L |
| 4                             | AGND    | Ground  |

(Option)

## ■ Dimensions



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# ■ OSD Menu

| Menu     | Parameter    | Default      | Range                                         |
|----------|--------------|--------------|-----------------------------------------------|
| LENS     | IRIS         | MODE         | AUTO                                          |
|          |              | AUTO H-LIMIT | 0                                             |
|          |              | AUTO M-LIMIT | 4                                             |
|          |              | AUTO L-LIMIT | 16                                            |
|          |              | MANUAL LEVEL | 16                                            |
|          |              | INTERLOCK    | ON                                            |
|          | ZOOM         | POSITION     | -----                                         |
|          |              | DZ-MODE      | OFF                                           |
|          |              | DZ-LIMIT     | X1                                            |
|          |              | DZ-MANUAL    | 200                                           |
|          |              | POSITION     | ----- x-----                                  |
|          |              | SPEED        | 2                                             |
|          | FOCUS        | MODE         | AFTER TELE                                    |
|          |              | ONE TIME AF  | ON                                            |
|          |              | POSITION     | -----                                         |
|          |              | SPEED        | 2                                             |
|          |              | INTERVAL     | 10sec                                         |
|          |              | INTERVAL     | 10sec, 30sec, 1min, 5min, 10min, 30min, 60min |
|          | DAY&NIGHT    | MODE         | AUTO                                          |
|          |              | D=>N LEVEL   | 13                                            |
|          |              | N=>D LEVEL   | 7                                             |
|          |              | DELAY        | SLOW                                          |
|          |              | POSITION     | -----                                         |
|          |              | INITIALIZE   | ON                                            |
|          | START UP     | MOVE         | OFF                                           |
|          |              | PRESET No.   | 0                                             |
|          |              | No.          | 0                                             |
|          | PRESET       | SAVE         | ON                                            |
|          |              | LOAD         | ON                                            |
|          |              | MODE         | OFF                                           |
|          | DIS          | RANGE        | 10%                                           |
|          |              | LEVEL        | HIGH                                          |
|          |              | AUTO CENTER  | 50%                                           |
|          |              | AUTO CENTER  | 50%, 100%                                     |
| EXPOSURE | BRIGHTNESS   |              | 10                                            |
|          | SHUTTER      | MODE         | AUTO                                          |
|          |              | AUTO H-LIMIT | 1/15000                                       |
|          |              | AUTO M-LIMIT | 1/1000                                        |
|          |              | AUTO L-LIMIT | 1/30                                          |
|          |              | MANUAL LEVEL | 1/30                                          |
|          | SENS-UP      |              | OFF                                           |
|          | AGC          | MODE         | AUTO                                          |
|          |              | PRIORITY1    | IRIS>AGC                                      |
|          |              | PRIORITY2    | AGC>SENS                                      |
|          |              | AUTO LIMIT   | 72dB                                          |
|          |              | MANUAL LEVEL | 0dB                                           |
|          |              | AUTO GAMMA   | OFF                                           |
|          |              | AUTO SETUP   | 10                                            |
|          |              | POSITION     | -----                                         |
|          | PEAK-AVE     |              | 10                                            |
|          | BACKLIGHT    | MODE         | OFF                                           |
|          |              | H-POSI       | 16                                            |
|          |              | V-POSI       | 12                                            |
|          |              | H-SIZE       | 6                                             |
|          |              | V-SIZE       | 10                                            |
|          | ECLIPSE      | MODE         | OFF                                           |
|          |              | LEVEL        | 10                                            |
|          |              | COLOR        | BLACK                                         |
|          | WDR          | MODE         | OFF                                           |
|          |              | LEVEL        | HIGH                                          |
| COLOR    | WB           |              | AUTO                                          |
|          | MANUAL TEMP  |              | 5000K                                         |
|          | R-GAIN       |              | 10                                            |
|          | B-GAIN       |              | 10                                            |
|          | COLOR GAIN   |              | 10                                            |
|          | SUPPRESS     |              | 0                                             |
|          | BLACK ADJUST |              | NIGHT                                         |
|          | NIGHT COLOR  |              | OFF                                           |
|          | NIGHT COLOR  |              | OFF, ON                                       |

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| Menu   | Parameter |             | Default  | Range                                                                                                                                                                                              |
|--------|-----------|-------------|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| IMAGE  | SHARPNESS |             | 5        | 0-10                                                                                                                                                                                               |
|        | DNR       |             | HIGH+    | OFF, LOW, LOW+, MIDDLE, MIDDLE+, HIGH, HIGH+                                                                                                                                                       |
|        | HEAT HAZE |             | OFF      | OFF, LOW, MIDDLE, HIGH                                                                                                                                                                             |
|        | DWDR      |             | OFF      | OFF, LOW, MIDDLE, HIGH                                                                                                                                                                             |
|        | DEFOG     | MODE        | OFF      | OFF, MANUAL, AUTO                                                                                                                                                                                  |
|        |           | LEVEL       | MIDDLE   | LOW, MIDDLE, HIGH                                                                                                                                                                                  |
|        | GAMMA     |             | 0.45     | 0.35, 0.45, 0.55, 0.65, 0.75, 0.85, 0.95, DEFOG-L, DEFOG-M, DEFOG-H                                                                                                                                |
|        | PRIVACY   | NO.         | 0        | 0-15                                                                                                                                                                                               |
|        |           | DISPLAY     | OFF      | OFF, ON                                                                                                                                                                                            |
|        |           | H-POSI      | 12       | 0-60                                                                                                                                                                                               |
|        |           | V-POSI      | 2        | 0-34                                                                                                                                                                                               |
|        |           | H-SIZE      | 3        | 0-60                                                                                                                                                                                               |
|        |           | V-SIZE      | 3        | 0-34                                                                                                                                                                                               |
|        |           | Y-LEVEL     | 10       | 0-20                                                                                                                                                                                               |
|        |           | CB-LEVEL    | 10       | 0-20                                                                                                                                                                                               |
|        |           | CR-LEVEL    | 10       | 0-20                                                                                                                                                                                               |
|        |           | TR-LEVEL    | 0        | 0-3                                                                                                                                                                                                |
|        | MIRROR    |             | OFF      | OFF, ON                                                                                                                                                                                            |
|        | FLIP      |             | OFF      | OFF, ON                                                                                                                                                                                            |
|        | FREEZE    |             | OFF      | OFF, ON                                                                                                                                                                                            |
|        | COLORBAR  |             | OFF      | OFF, ON                                                                                                                                                                                            |
| SYSTEM | COMM      | CAMERA ID   | 0        | 0-63                                                                                                                                                                                               |
|        |           | BAUDRATE    | 115200   | 2400, 4800, 9600, 19200, 38400, 57600, 115200                                                                                                                                                      |
|        |           | PROTOCOL    | GCC-CP   | GCC-CP, PELCO-D, PELCO-P, VISCA                                                                                                                                                                    |
|        |           | PORT        | 1        | 1, 2                                                                                                                                                                                               |
|        | VIDEO     | FRAMERATE   | 30/60Hz  | 30/60Hz, 25/50Hz, (Option 29.97/59.94Hz)                                                                                                                                                           |
|        |           | FORMAT      | 1080p 30 | 30/60Hz : 720p30, 720p60, 1080p30, 1080p60, 1080i60, 1080PsF30<br>25/50Hz : 720p25, 720p50, 1080p25, 1080p50, 1080i50, 1080PsF25<br>29/59Hz : 720p29, 720p59, 1080p29, 1080p59, 1080i59, 1080PsF24 |
|        |           | SDI MODE    | HD-SDI   | OFF, HD-SDI, 3G-SDI, EX-2.0 135M, EX-2.1 135M, EX-3.0 135M,                                                                                                                                        |
|        |           | TMDS MODE   | RGB      | OFF, RGB, YCbCr                                                                                                                                                                                    |
|        |           | IMAGE RANGE | FULL     | FULL, COMP                                                                                                                                                                                         |
|        |           | COLOR SPACE | HD-PbPr  | YUV, SD-CbCr, HD-PbPr                                                                                                                                                                              |
|        |           | CONFIRM     | ON       | ↓                                                                                                                                                                                                  |
|        | AUDIO     |             | OFF      | OFF, ON                                                                                                                                                                                            |
|        | LANGUAGE  |             | ENGLISH  | ENGLISH, JAPANESE, KOREAN, CHINESE(T), CHINESE(S)                                                                                                                                                  |
|        | TITLE     | CAM TITLE   | OFF      | OFF, ON                                                                                                                                                                                            |
|        |           | TIME CODE   | OFF      | OFF, ON                                                                                                                                                                                            |
|        |           | POSITION    | TOP-R    | TOP-R, TOP-L, BOTTOM-R, BOTTOM-L                                                                                                                                                                   |
|        | MOTION    | MODE        | OFF      | OFF, ON                                                                                                                                                                                            |
|        |           | WINDOW      | No.      | 0                                                                                                                                                                                                  |
|        |           |             | USE      | ON                                                                                                                                                                                                 |
|        |           |             | H-POSI   | 0                                                                                                                                                                                                  |
|        |           |             | V-POSI   | 0                                                                                                                                                                                                  |
|        |           |             | H-SIZE   | 30                                                                                                                                                                                                 |
|        |           |             | V-SIZE   | 16                                                                                                                                                                                                 |
|        |           | SENSITIVITY |          | 5                                                                                                                                                                                                  |
|        |           | DISPLAY     |          | OFF                                                                                                                                                                                                |
|        |           | TEXT ALARM  |          | OFF                                                                                                                                                                                                |
|        | VERSION   | S/N         | -----    | -----                                                                                                                                                                                              |
|        |           | FIRMWARE    | -----    | -----                                                                                                                                                                                              |
|        |           | VERSION     | -----    | -----                                                                                                                                                                                              |
|        | RESET     |             | ON       | ↓                                                                                                                                                                                                  |

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