

# MC-209

1080p 60fps 20x Zoom Module

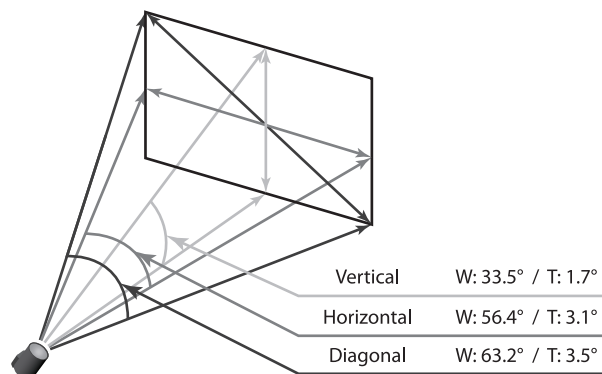
**LVDS EX-SDI CVBS**



## Features

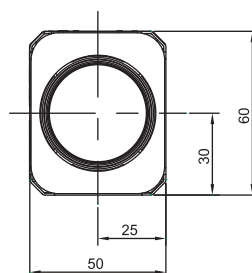
- 1/2.8" 2MP Sony Starvis CMOS sensor
- 1080p 60fps/30fps, 1080i 60fps, 720p 60fps/30fps
- 20x Optical Zoom(5.2mm ~ 104mm) & 32x Digital Zoom
- Day & Night(ICR)
- Real-time True WDR
- Digital Noise Reduction(2D+3D)
- Digital Image Stabilization
- Privacy Mask Function
- High Light Compensation
- Intelligent Motion Detection
- Defog Function
- Supports VISCA, Pelco-D/P Protocol
- Video Out : LVDS, EX-SDI, CVBS

## Field of View

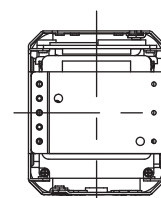


## Dimensions

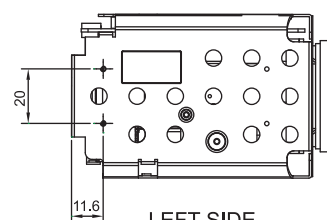
Unit : mm



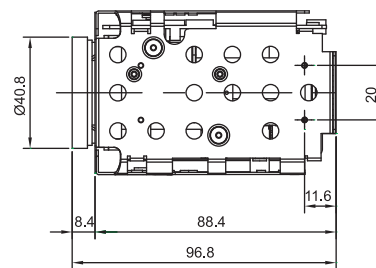
FRONT



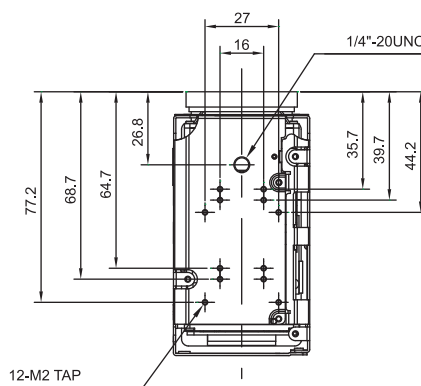
BACK



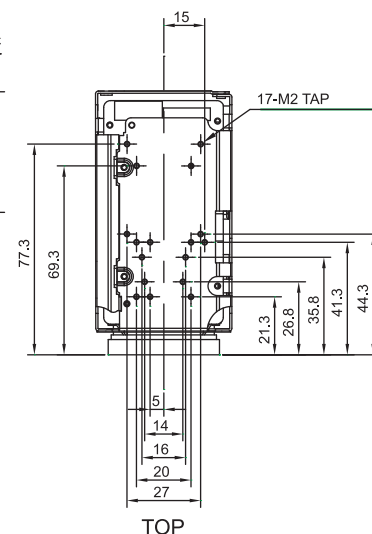
LEFT SIDE



RIGHT SIDE



BOTTOM



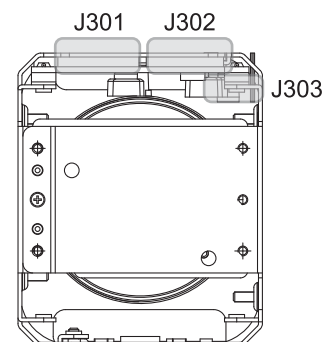
TOP

## Specifications

| MC-209                    |                                                                                                                                   |       |       |       |
|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|
| Image Sensor              | 1/2.8" Sony Starvis CMOS Sensor                                                                                                   |       |       |       |
| Total Pixels              | 1,945 (H) x 1,109 (V) = 2.16M pixels                                                                                              |       |       |       |
| Active Pixels             | 1,937,(H) x 1,097 (V) = 2.12M pixels                                                                                              |       |       |       |
| Scanning System           | Progressive Scan                                                                                                                  |       |       |       |
| Sync. System              | Internal                                                                                                                          |       |       |       |
| Resolution                | Digital : 1080p/60(50)fps, 1080i60(50)fps,1080p/30(25)fps,<br>720p/60(50)fps, 720p/30(25)fps<br>Analog : 700TVL                   |       |       |       |
| Min. Illumination         | Color(1/30s, 78dB) : 0.01 lux , BW(1/30s, 78dB) : 0.001lux<br>Color DSS(1/1s, 78dB) : 0.001 lux , BW DSS(1/1s, 78dB) : 0.0001 lux |       |       |       |
| Video Output              | HD : LVDS, EX-SDI<br>Analog SD : VBS                                                                                              |       |       |       |
| S/N Ratio                 | more than 50dB(AGC off)                                                                                                           |       |       |       |
| Lens Type                 | 20x Day & Night Zoom Lens                                                                                                         |       |       |       |
| Zoom Ratio                | Optical 20x, Digital 32x Zoom                                                                                                     |       |       |       |
| Focal Length              | f = 5.2 mm ~ 104 mm                                                                                                               |       |       |       |
| Aperture Ratio            | F1.5 (wide) ~ F3.5 (tele)                                                                                                         |       |       |       |
| Angle Of View(D, H, V)    | Wide                                                                                                                              | 63.2° | 56.4° | 33.5° |
|                           | Tele                                                                                                                              | 3.5°  | 3.1°  | 1.7°  |
| AF Mode                   | Auto / One Push / Manual                                                                                                          |       |       |       |
| Min. Distance             | 0.5 / 1.5 / 3.0 / 5.0 / 10.0 m                                                                                                    |       |       |       |
| Lens Refresh              | One Push / 1 ~ 10Day                                                                                                              |       |       |       |
| Digital Zoom              | Off / MAX 2x ~ 32x                                                                                                                |       |       |       |
| Exposure                  | Auto / Iris.P / Shut.P / Manual                                                                                                   |       |       |       |
| Gain Control(AGC)         | Off / On                                                                                                                          |       |       |       |
| Shutter Speed             | 1/30(25) ~ 1/60,000 sec                                                                                                           |       |       |       |
| Iris                      | 0 ~ 20 steps                                                                                                                      |       |       |       |
| Digital Slow Shutter(DSS) | Off / 2x / 4x / 8x / 16x / 32x (/64x : 60 or 50 fps mode only)                                                                    |       |       |       |
| Brightness                | 0 ~ 20 steps                                                                                                                      |       |       |       |
| WDR/BLC                   | Off / WDR / BLC                                                                                                                   |       |       |       |
| Day&Night                 | Auto / Day / Night / Ext-in                                                                                                       |       |       |       |
| White Balance             | Auto / One Push / Manual / Indoor / Outdoor / Auto-Ext                                                                            |       |       |       |
| HLC                       | Off / On / Night Only                                                                                                             |       |       |       |
| DNR                       | Auto / Off / Low / Middle / High                                                                                                  |       |       |       |
| Mirror                    | Off / H / V / H&V                                                                                                                 |       |       |       |
| Sharpness                 | 0 ~ 10 steps                                                                                                                      |       |       |       |
| ACE                       | Off / Low / Middle / High                                                                                                         |       |       |       |
| Defog                     | Off / On(Auto / Manual)                                                                                                           |       |       |       |
| Privacy Mask              | Max. 24 Areas                                                                                                                     |       |       |       |
| Motion Detection          | Max. 3 Areas                                                                                                                      |       |       |       |
| Defect Detection          | Off / On                                                                                                                          |       |       |       |
| System                    | NTSC / PAL                                                                                                                        |       |       |       |
| Communication             | Baud Rate : 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200<br>Protocol : VISCA / Pelco-D / Pelco- P / Update                 |       |       |       |
| Language                  | English / Simplified Chinese / Traditional Chinese / Japanese                                                                     |       |       |       |
| Power Source              | 9V to 15V DC                                                                                                                      |       |       |       |
| Power Consumption         | 500mA                                                                                                                             |       |       |       |
| Power Input               | Connector                                                                                                                         |       |       |       |
| Video Output              | Connector                                                                                                                         |       |       |       |
| Storage Temperature       | -20℃ ~ +60℃ (Humidity : 0%RH ~ 90%RH)                                                                                             |       |       |       |
| Operating Temperature     | -10℃ ~ +50℃ (Humidity : 0%RH ~ 90%RH)                                                                                             |       |       |       |
| Dimensions                | 50(W) x 60(H) x 97(D)                                                                                                             |       |       |       |
| Weight                    | 232g                                                                                                                              |       |       |       |

\* Design and specifications are subject to change without notice.

## Pin Assignment



| J301 |           |
|------|-----------|
| 1    | TXOUT3+   |
| 2    | TXOUT3-   |
| 3    | TXCLKOUT+ |
| 4    | TXCLKOUT- |
| 5    | TXOUT2+   |
| 6    | TXOUT2-   |
| 7    | TXOUT1+   |
| 8    | TXOUT1-   |
| 9    | TXOUT0+   |
| 10   | TXOUT0-   |
| 11   | GND       |
| 12   | TxD       |
| 13   | RxD       |
| 14   | DC+12V IN |
| 15   | DC+12V IN |
| 16   | DC+12V IN |
| 17   | DC+12V IN |
| 18   | DC+12V IN |
| 19   | GND       |
| 20   | GND       |
| 21   | TXOUT7+   |
| 22   | TXOUT7-   |
| 23   | TXOUT6+   |
| 24   | TXOUT6-   |
| 25   | EXSDI+    |
| 26   | EXSDI-    |
| 27   | TXOUT5+   |
| 28   | TXOUT5-   |
| 29   | TXOUT4+   |
| 30   | TXOUT4-   |

| J302 |           |
|------|-----------|
| 1    | GND       |
| 2    | TxD       |
| 3    | RxD       |
| 4    | NC        |
| 5    | GND       |
| 6    | NC        |
| 7    | GND       |
| 8    | ADKEY     |
| 9    | NC        |
| 10   | D/N-IN    |
| 11   | NC        |
| 12   | MD-OUT    |
| 13   | 485-DIR   |
| 14   | NC        |
| 15   | GND       |
| 16   | DC+5V OUT |
| 17   | GND       |
| 18   | VBS-OUT   |
| 19   | GND       |
| 20   | DC+12V IN |
| 21   | DC+12V IN |
| 22   | DC+12V IN |
| 23   | DC+12V IN |
| 24   | DC+12V IN |

Ref 05002HR-24J05(YEONHO)

| J303 |         |
|------|---------|
| 1    | GND     |
| 2    | VBS-OUT |

Ref 12505WR-02(YEONHO)

Ref USL00-30L-C(KEL Cop.)