# MV1-D2048x1088-96-G2

The camera series MV1-D2048x1088(I/C)-96-G2 is based on the CMOSIS CMV2000 CMOS image sensor

## Features

- CMOSIS CMV2000 CMOS image sensor
- 2048 x 1088 pixel resolution
- Good NIR spectral response
- Suitable for standard and low light applications
- Up to 42fps @ full resolution
- Global shutter
- Available in monochrome, NIR and color
- Extended sensor and camera features
- Up to 10bit greyscale resolution
- Boardlevel and OEM solution available
- GigEVision interface

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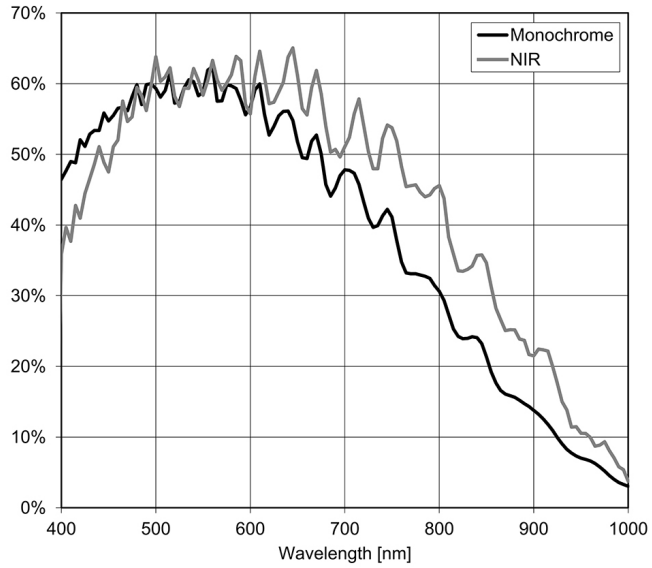
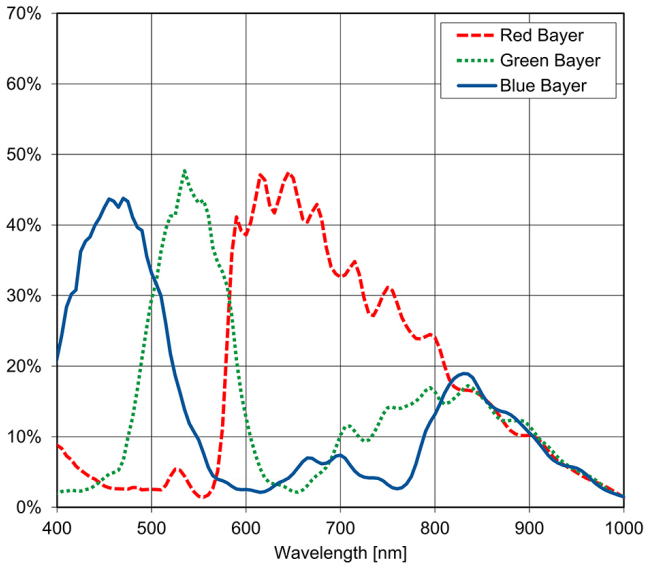
## Quantum Efficiency Image Sensor




## Image Sensor Specifications

| | |
|---|---|
| Manufacturer / Type | CMOSIS, CMV2000 |
| Technology | CMOS |
| Optical format | 2/3" |
| Optical diagonal | 12.75mm |
| Resolution | 2048 x 1088 |
| Pixel size | 5.5µm x 5.5µm |
| Active optical area | 11.26mm x 5.98mm |
| Dark current | 125e-/s |
| Read out noise | 13e- |
| Full well capacity / SNR | 11ke- / 105:1 |
| Spectral range | Monochrome: 350 to 950nm (to 10% of peak responsivity)<br>NIR: 350 to 1000nm (to 10% of peak responsivity)<br>Color: 380 to 670nm (to 10% of peak responsivity) |
| Responsivity | Monochrome: 1100 x $10^3$ DN / (J/m²) @ 520nm / 8bit<br>NIR: 900 x $10^3$ DN / (J/m²) @ 850nm / 8bit<br>Color: 857 x $10^3$ DN / (J/m²) @ 540nm / 8bit |
| Quantum Efficiency | Monochrome: < 60%<br>NIR: < 60%<br>Color: < 45% |
| Optical fill factor | 42% without micro lenses |
| Dynamic range | 60dB |
| Characteristic curve | Linear, Piecewise linear |
| Shutter mode | Global shutter |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## Camera Specifications

| | |
|---|---|
| Interface | GigE |
| Frame rate | 42fps |
| Pixel clock | 48MHz |
| Camera taps | 2 |
| Greyscale resolution | 8Bit / 10Bit |
| Fixed pattern noise (FPN) | < 1DN RMS @ 8Bit |
| Exposure time range | 13µs - 349ms |
| Analog gain | yes |
| Digital gain | 0.1 to 15.99 (FineGain) |
| Trigger Modes | Free running (non triggered), external Trigger, SWTrigger |
| Features | Configurable region of interest (ROI), Up to 8 regions of interest (MROI), Decimation in y-direction, 2 look-up tables (12-to-8Bit) on user-defined image region (Region-LUT), Constant frame rate independent of exposure time, Crosshairs overlay on the image, Temperature monitoring of camera, Camera informations readable over SDK, Ultra low trigger delay and low trigger jitter, Extended trigger input and strobe output functionality, Status line in picture |
| Operation temperature / moisture | 0°C ... + 50°C / 20% ... 80% |
| Storage temperature / moisture | -25°C ... 60°C / 20% ... 95% |
| Power supply | +12VDC (-10%) ... +24VDC (+10%) |
| Power consumption | < 5.1W |
| Lens mount | C-Mount (CS-Mount optional) |
| I/O Inputs | 2x Opto-isolated 2x RS-422 Opto-isolated |
| I/O Outputs | 2x Opto-isolated |
| Dimensions | 55 x 55 x 52mm³ |
| Mass | 265g |
| Connector I/O (Power) | Hirose 12-pole (mating plug HR10A-10P-12S) |
| Connector Interface | RJ-45 |
| Conformity | CE / RoHS / WEEE |
| IP Code | IP40 |


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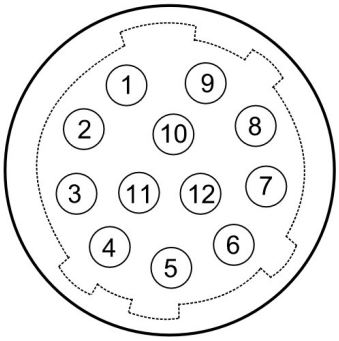
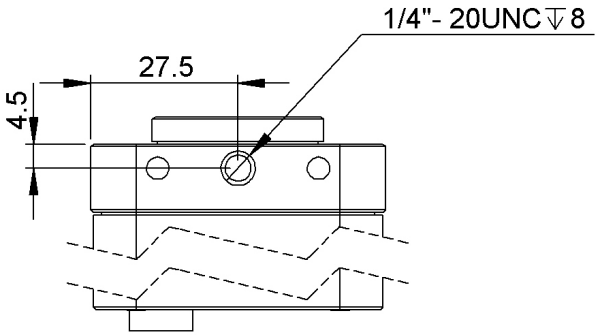
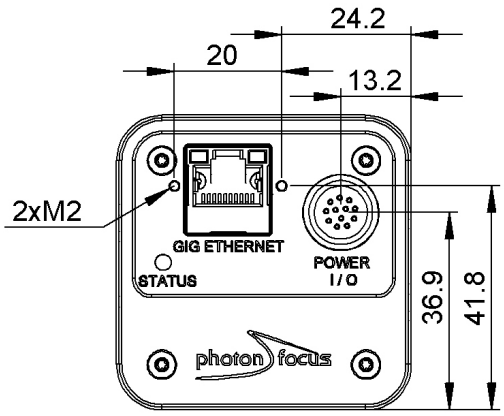
## Connectors

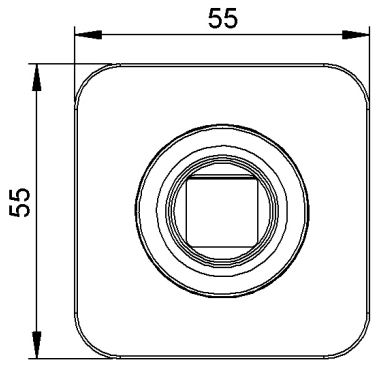
| Pin | I/O Type | Name | Description |
|---|---|---|---|
| 1 | PWR | CAMERA_GND | Camera GND 0V |
| 2 | PWR | CAMERA_PWR | Camera Power 12V... 24V |
| 3 | O | ISO_OUT0 | Default Strobe out, internally Pulled up to ISO_PWR with 4k7 Resistor |
| 4 | I | ISO_INC0_N | INC0 differential input (G2: RS-422, H2: HTL), negative polarity |
| 5 | I | ISO_INC0_P | INC0 differential input (G2: RS-422, H2: HTL), positive polarity |
| 6 | PWR | ISO_PWR | Power supply 5V… 24V for output signals |
| 7 | I | ISO_IN0 | IN0 input signal |
| 8 | O | ISO_OUT1 (MISC) | Q1 output from PLC, no Pull up to ISO_PWR; can be used as additional output (by adding Pull up) or as controllable switch (max. 100mA, no capacitive or inductive load) |
| 9 | I | ISO_IN1(Trigger IN) | Default Trigger IN |
| 10 | I | ISO_INC1_N | INC1 differential input (G2: RS-422, H2: HTL), negative polarity |
| 11 | I | ISO_INC1_P | INC1 differential input (G2: RS-422, H2: HTL), positive polarity |
| 12 | PWR | ISO_GND | I/O GND 0V |

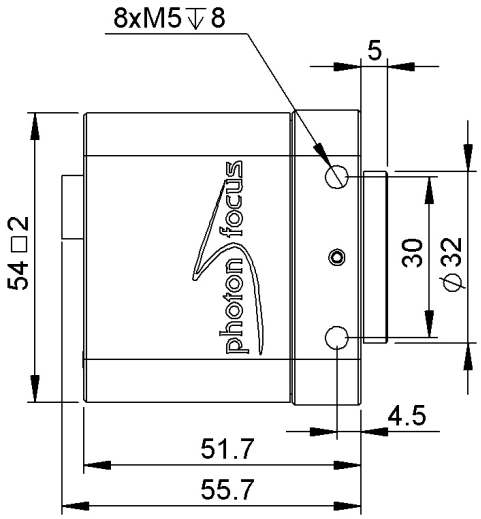



## Dimensions





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## Explanation

DN DigitalNumber (equals to LSB)

$e^-$ Electrons

## Order Information

| | |
|---|---|
| MV1-D2048x1088-96-G2-10 | BW model |
| MV1-D2048x1088I-96-G2-10 | NIR model |
| MV1-D2048x1088C-96-G2-10 | Color imager model |

## Compatibility

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