

# MV4-D2048x1088-C01-HS02-GT

The CMOS camera series MV4 was developed for demanding applications in machine vision, motion analysis and optical metrology. The used IMEC CMOS image sensor CMV2K-SM5x5 is optimized for very high frame rates and high sensitivity. The camera is also equipped with a wide range of features, for example to reduce the amount of data to be transmitted.



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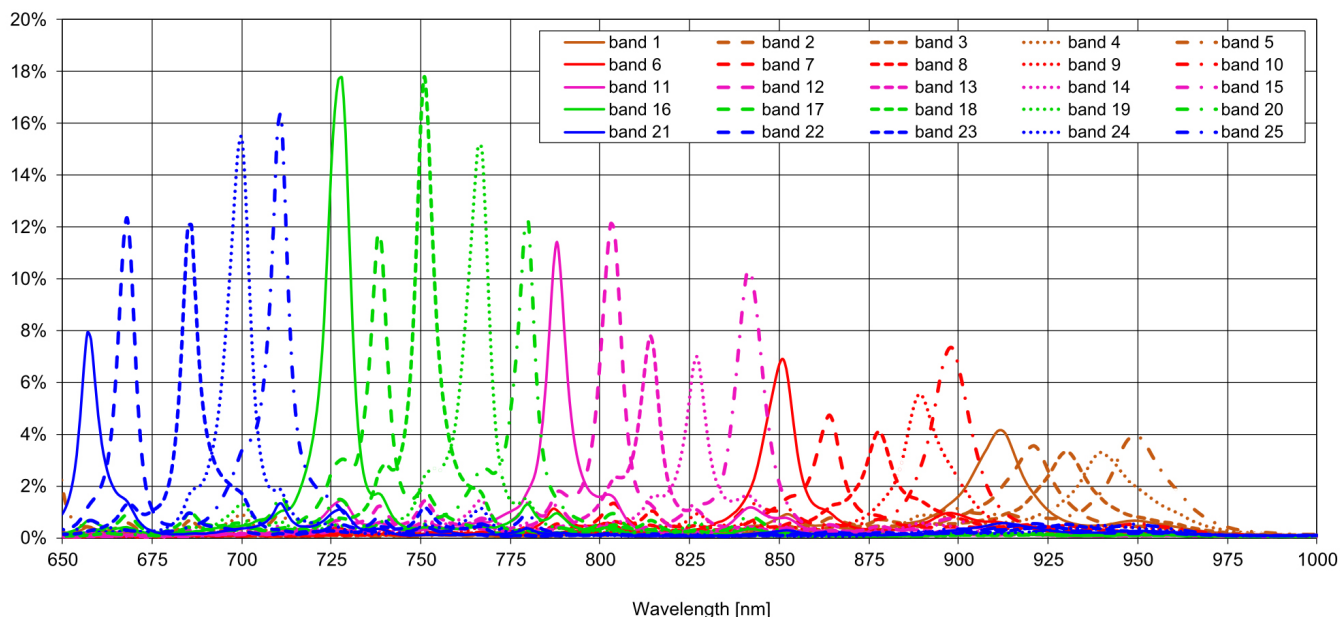
Email: [sales@adeptturnkey.com.au](mailto:sales@adeptturnkey.com.au)  
Web site: [www.adept.net.au](http://www.adept.net.au)

## Features

- IMEC CMV2K-SM5x5-NIR CMOS image sensor
- 2048 x 1088 pixel resolution
- Good NIR spectral response
- Suitable for hyperspectral applications
- Up to 340fps @ full resolution
- Global shutter
- 25 pass bands from 665nm to 975nm
- Up to 10bit greyscale resolution
- 4x Isolated inputs or shaft encoder
- 3x Isolated outputs
- 10GigE and GigEVision interface
- PoE (Power Over Ethernet) (IEEE 802.3bt standard Class 4) or Wall adapter (+12VDC (-10%) ... +24VDC (+10%))



## Quantum Efficiency Image Sensor



## Image Sensor Specifications

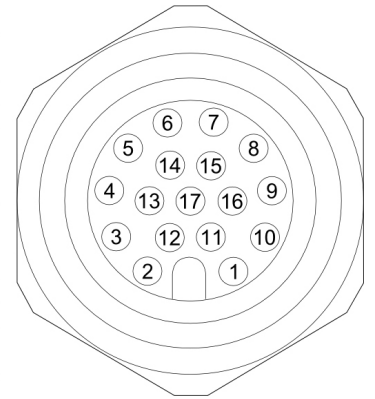
Manufacturer / Type	IMEC, CMV2K-SM5x5
Technology	CMOS
Optical format	2/3"
Optical diagonal	12.75mm
Resolution	2048 x 1088
Pixel size	5.5µm x 5.5µm
Active optical area	11.26mm x 5.98mm
Dark current	125e-/s
Read out noise	13e-
Full well capacity / SNR	11ke-
Spectral range	Hyperspectral: 665 to 975nm (25 pass bands)
Responsivity	Hyperspectral: 454 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 715nm / 8bit
Quantum Efficiency	Hyperspectral: < 18%
Optical fill factor	42% without micro lenses
Dynamic range	60dB
Characteristic curve	Linear, Piecewise linear
Shutter mode	Global shutter

## Camera Specifications

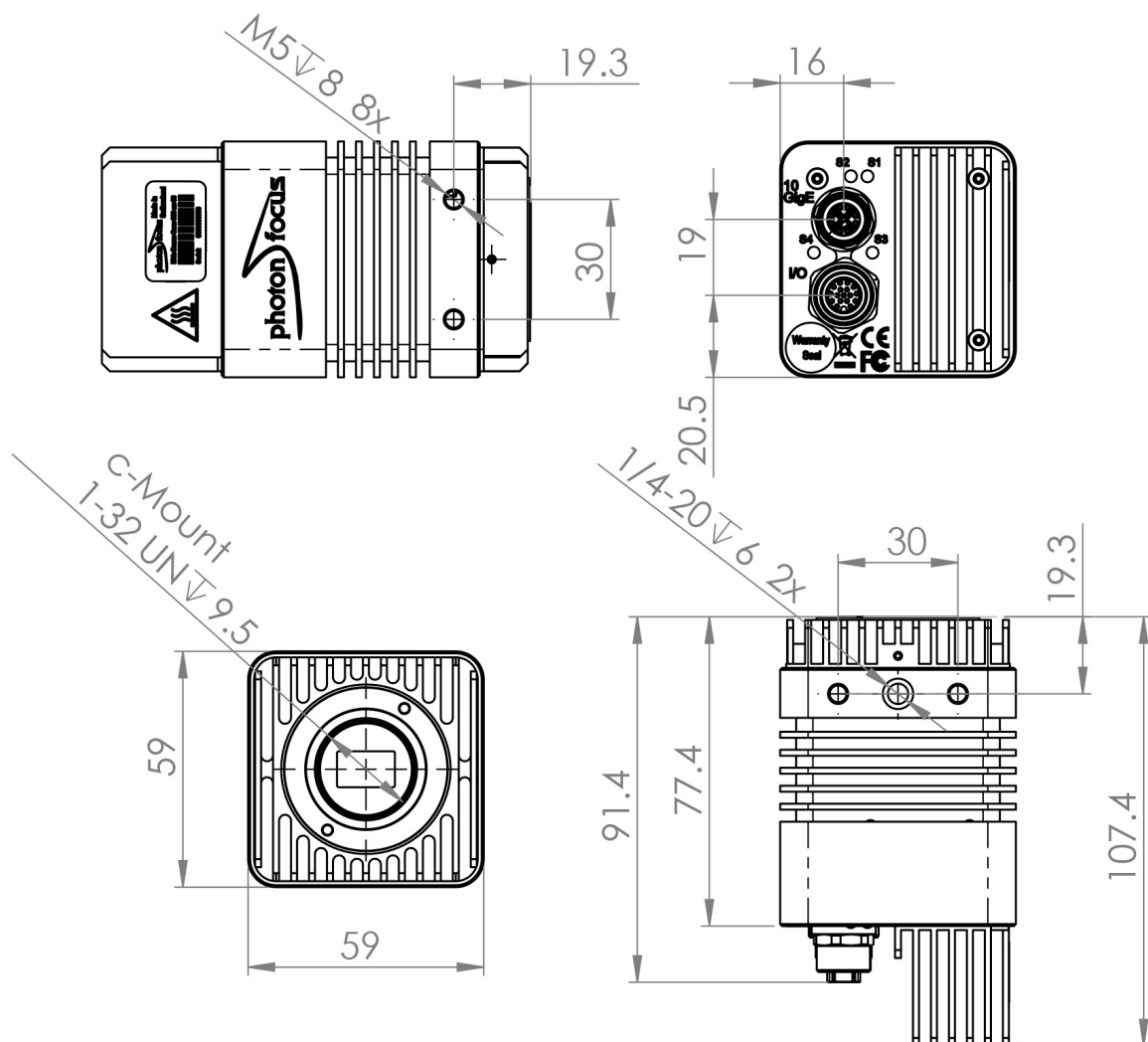
Interface	10GigE
Frame rate	340fps
Pixel clock	n/a
Camera taps	n/a
Greyscale resolution	8, 10 and 12 Bit
Fixed pattern noise (FPN)	< 1DN RMS @ 8Bit
Exposure time range	6 $\mu$ s - 346ms
Analog gain	yes
Digital gain	0.1 to 15.99 (FineGain)
Trigger Modes	Free running (non triggered), external Trigger, SWTrigger, Encoder
Features	Resolution 2048 x 1088 (CMV2K-SM5x5) pixels, Snapshot camera, Optimized for low light conditions, Spectral range: Hyperspectral 665 – 975 nm (25 pass bands), Global shutter high-speed CMOS image sensor, Gigabit and 10-Gigabit Ethernet interfaces, GigEVision and GenICam compliant, Frame rates MV4-D2048x1088-C01-HS02-GT camera models at maximal resolution 340fps (10GigE), I/O capabilities: 4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL), 3x Isolated outputs (2x open drain, 1x TTL highspeed), Up to 8 regions of interest (MROI), 2 look-up tables (12-to-8 bit) on user-defined image region (Region-LUT)
Operation temperature / moisture	0°C ... 50°C / 20 ... 80 %
Storage temperature / moisture	-25°C ... 60°C / 20 ... 95 %
Power supply	PoE (IEEE 802.3bt standard Class 4) or Wall adapter (+12VDC (-10%) ... +24VDC (+10%))
Power consumption	< 12.5W
Lens mount	C mount
I/O Inputs	4x Isolated inputs or shaft encoder A, B, Z, Y interface (RS422, TTL, D-HTL, HTL)
I/O Outputs	3x Isolated outputs (2x open drain, 1x TTL high-speed)
Dimensions	59 x 59 x 104.2 mm <sup>3</sup>
Mass	470g
Connector I/O (Power)	17 pin M12
Connector Interface	X-coded M12
Conformity	CE / RoHS / WEEE
IP Code	IP40

## Connectors

Pin	I/O Type	Name	Description
1	PWR	CAMERA_GND	Camera GND, 0V
2	PWR	CAMERA_PWR	Camera Power
3	I	ISO_INC0_P / ISO_IN0	Isolated RS422/HTL positive differential or Isolated TTL/HTL single ended input
4	I	ISO_INC0_N / ISO_GND	Isolated RS422/HTL negativ differential input or ground
5	I	ISO_INC1_P / ISO_IN1	Isolated RS422/HTL positive differential or Isolated TTL/HTL single ended input
6	I	ISO_INC1_N / ISO_GND	Isolated RS422/HTL negativ differential input or ground
7	I	ISO_INC2_P / ISO_IN2	Isolated RS422/HTL positive differential or Isolated TTL/HTL single ended input
8	I	ISO_INC2_N / ISO_GND	Isolated RS422/HTL negativ differential input or ground
9	I	ISO_IN3	Isolated TTL input
10	O	ISO_OUT2	Isolated TTL output
11	PWR	CAMERA_GND	Camera GND, 0V
12	PWR	CAMERA_PWR	Camera Power
13	O	ISO_OUT0	Isolated open drain output
14	O	ISO_OUT1	Isolated open drain output
15	IO	RS485_DATA_P	RS485 interface data positive polarity
16	IO	RS485_DATA_N	RS485 interface data negative polarity
17	PWR	ISO_GND	Isolated I/O GND



## Dimensions



## Explanation

DN DigitalNumber (equals to LSB)

e<sup>-</sup> Electrons

## Order Information

MV4-D2048x1088-C01-HS02-GT      Hyperspectral model

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## Compatibility



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