

CMOS Camera

MV1-D2048 SERIES

4.2 Megapixel resolution with CMOS image sensor

Features

- CMOSIS CMV4000 CMOS image sensors
- 2048 x 2048 pixel resolution
- Available in monochrome, enhanced NIR and color
- Suitable for standard and low light applications
- Up to 56 fps @ full resolution
- Global shutter
- Extended features
- Global shutter
- CameraLink® and GigE interface
- 10 bit greyscale resolution
- Configuration via register based ASCII protocol
- Boardlevel or OEM solution available



GigE
VISION
GEN<I>CAM

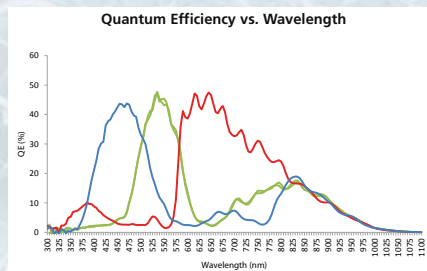
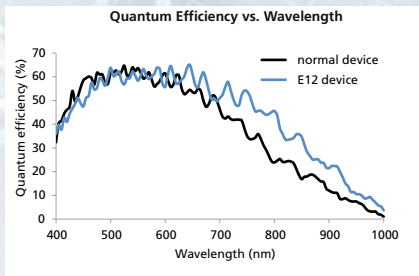


CAMERA
Link

Advantages

Special readoutmodes for highest possible framerate

Spectral response of the CMOSIS CMV4000 CMOS image sensor monochrome (left) and color (right)



DR1-D2048-192-G2-8 ¹⁾	MV1-D2048-80-G2-12	MV1-D2048-160-CL-12 MV1-D2048-96-G2-12	MV1-D2048-240-CL-8
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Image Sensor	
Image sensor	CMOSIS CMV4000
Technology	CMOS active pixel (APS)
Scanning system	Progressive scan
Optical format / diagonal	1" (15.92 mm diagonal)
Resolution	2048 x 2048 pixels
Pixel size	5.5 µm x 5.5 µm
Active optical area	11.26 mm x 11.26 mm (maximum)
Dark current	125 e ⁻ /s @ 25°C
Full well capacity / SNR	11 ke ⁻
Spectral range	< 350 to 900 nm (to 10% of peak responsivity)
Sensitivity	5.56 V / lux.s
Quantum Efficiency	60% @ 550 nm with micro lenses
Optical fill factor	42% without micro lenses
Dynamic range	60 dB in linear mode
Colour format	Monochrome, Colour, enhanced NIR
Characteristic curve	Linear, Piecewise linear
Shutter mode	Global shutter
Read out mode	Simultaneous read out (read out during exposure)

Camera			
Exposure time	24.1 µs ... 0.349 s	28.7 µs ... 0.419 s	28.7 µs ... 0.419 s (CL)
Frame rate	45 fps ¹⁾	19 fps	24.1 µs ... 0.349s (GigE)
Pixel clock	48 MHz	40 MHz	37 fps (CL); 22 fps (GigE)
Camera taps	1		80 MHz (CL) / 48 MHz (GigE)
Greyscale resolution	8 bit / 10 bit ¹⁾		80 MHz
Fixed pattern noise (FPN)		< 1 DN @ 8 bit / correction ON	45 fps (56 fps ²⁾)
Analogue gain		8 bit / 10 bit	
Digital gain		1	
Configuration interface		0.1 to 15.99 (Fine Gain) ³⁾	
Trigger modes		CL SERIAL (Baudrate user selectable) (CL) / Gigabit Ethernet (GigE)	
Features		<ul style="list-style-type: none"> Free running (non triggered) • Interface trigger • External trigger input • Software trigger Region of Interest (ROI) • 512 Multiple ROI (MROI) • Decimation Y • 2 Look-up tables (LUT) Constant frame rate • Crosshair • Convolver 3x3 • Temperature • Image information <ul style="list-style-type: none"> Extended trigger input and strobe output functionality Modulation can be disabled to transmit original image data²⁾ 	
Interface		CameraLink® Base or GigE (GigE Vision & GenICam compliant)	
Operating temperature		0°C ... +50°C	
Power supply		+12 V DC (±10%) (CL) / +12 V ... +24 V DC (±10%) (GigE)	
Power consumption		< 4.2 W	
Lens mount		C-Mount (CS-Mount optional)	
Dimensions (H x W x L)		60 x 60 x 42 mm ³ (CL) / 60 x 60 x 51.5 mm ³ (GigE)	
Mass		230 g (CL) / 265 g (GigE)	
Conformity		CE / RoHS / WEEE	
Specials		Adjustable backfocus; Opto-isolated I/Os ; Dual RS-422 Inputs (GigE); Evaluation software for the Double Rate Technology	

Software	
Camera control	PFRremote™ graphical user interface (GUI) and PFLib (SDK); GigE: graphical user interface GEV Player and SDK; All 3rd party tools providing full support for GigE Vision and GenICam Demodulator DLL for implementation in GigE Vision and GenICam compatible image processing platforms ²⁾ ; HALCON extension package with demodulator sample ²⁾
OS	Windows and Linux (32 & 64 bit); other OS (QNX, etc) on request

¹⁾ If DR Mode active, 8 bit greyscale output only; 10 bit via LUT

²⁾ Applicable for DR Camera only

³⁾ Model available upon request

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