

CMOS Camera

# MV1-D1312 SERIES

1.4 Megapixel resolution with Photonfocus sensor

## Features

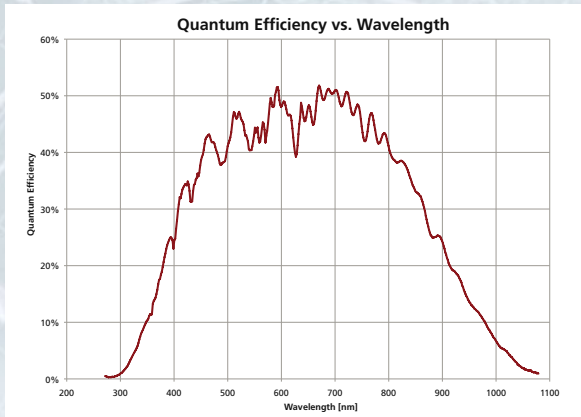
- Photonfocus A1312 CMOS image sensor
- 1312 x 1082 pixel resolution
- Good NIR spectral response
- Exceptional SNR up to 300:1
- Dynamic range up to 120 dB via LinLog®
- Up to 170 fps @ full resolution
- Global shutter
- Monochrome
- Extended features
- CameraLink® and GigE interface
- 12 bit greyscale resolution
- Boardlevel or OEM solution available



Compatible with



## Spectral response of the Photonfocus A1312 CMOS image sensor



MV1-D1312-40-CL-12 MV1-D1312-40-GB-12	MV1-D1312-80-CL-12 MV1-D1312-80-GB-12	MV1-D1312-160-CL-12 MV1-D1312-100-GB-12	MV1-D1312-240-CL-8
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Image Sensor	
Image sensor	Photonfocus A1312 (3. Generation)
Technology	CMOS active pixel (APS)
Scanning system	Progressive scan
Optical format / diagonal	1" (13.6 mm diagonal) maximum resolution 2/3" (11.6 mm diagonal) 1024 x 1024 resolution
Resolution	1312 x 1082 pixels
Pixel size	8 µm x 8 µm
Active optical area	10.48 mm x 8.64 mm (maximum)
Dark current	0.65 fA/pixel
Full well capacity / SNR	~90 ke / 300:1
Spectral range	< 370 to 1000 nm (to 10% of peak responsivity)
Responsivity	210 x 10 <sup>3</sup> DN / (J/m <sup>2</sup> ) @ 625 nm / 8 bit / gain = 1 (approximately 620 DN / (lux s) @ 625 nm / 8 bit / gain = 1)
Quantum Efficiency	> 50%
Optical fill factor	> 60%
Dynamic range	60 dB in linear mode; 120 dB with LinLog®
Colour format	Monochrome
Characteristic curve	Linear, LinLog®
Shutter mode	Global shutter
Read out mode	Sequential read out or simultaneous read out (read out during exposure only in linear mode) for higher frame rates

Camera			
Exposure time	10 µs ... 1.68 s / 100 ns steps	10 µs ... 0.83 s / 50 ns steps	10 µs ... 0.67 s / 40 ns steps (GigE) / 10 µs ... 0.41 s / 25 ns steps (CL) / 10 µs ... 0.279 s / 16.67 ns steps
Frame rate	27 fps	55 fps	68 fps (GigE) / 108 fps (CL) / 170 fps
Pixel clock	40 MHz		50 MHz (GigE) / 80 MHz (CL)
Camera taps	1	1 (GigE) / 2 (CL)	3
Greyscale resolution	8 bit / 10 bit / 12 bit		
Fixed pattern noise (FPN)	< 1 DN @ 8 bit / correction ON		
Analogue gain	1		
Digital gain	0.1 to 15.99 (Fine Gain) <sup>(1)</sup>		
Configuration interface	CL SERIAL (Baudrate user selectable) (CL); Gigabit Ethernet (GigE)		
Trigger modes	<ul style="list-style-type: none"> <li>Free running (non triggered)</li> <li>Interface trigger</li> <li>External trigger input</li> <li>Software trigger</li> </ul>		
Features	<ul style="list-style-type: none"> <li>Region of Interest (ROI)</li> <li>512 Multiple ROI (MROI)</li> <li>Decimation Y</li> <li>Image correction</li> <li>2 Look-up tables (LUT)</li> <li>Constant frame rate</li> <li>Crosshair</li> <li>Convolver 3x3</li> <li>Temperature</li> <li>Image information</li> <li>Extended trigger input and strobe output functionality</li> </ul>		
Interface	CameraLink® Base or GigE		
Operating temperature	0°C ... +50°C		
Power supply	+12 V DC (±10%) (CL) / +12 V ... +24 V DC (±10%) (GigE)		
Power consumption	2.5 W (CL) / < 4.5 W (GigE)   < 3.0 W (CL) / < 5.0 W (GigE)   < 3.3 W (CL) / < 5.2 W (GigE)   < 5.2 W		
Lens mount	C-Mount (CS-Mount optional)		
Dimensions (H x W x L)	60 x 60 x 45 mm <sup>3</sup> (CL) / 60 x 60 x 51 mm <sup>3</sup> (GigE)		
Mass	265 g (CL) / 310 g (GigE)		
Conformity	CE / RoHS / WEEE		
Specials	Adjustable backfocus; Opto-isolated I/Os; Dual RS-422 Inputs (GigE)		

Software	
Camera control	PFRemote™ 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 GenCam
OS	Windows and Linux (32 & 64 Bit); other OS (QNX, etc) on request

<sup>(1)</sup> Some models may support only digital gain 1/2/4/8