

USB3 Vision camera with Sony CMOS sensors - mvBlueFOX3-2

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- Compact industrial camera with USB 3
- High quality sensors
- Gray scale and color versions
- Hardware preprocessing on-board (FPGA)
- Image memory 256 MBytes
- Excellent cost-benefit ratio
- Available as [single-board version](#)

Variants:

- [Extended Temperature \(ET\)](#)

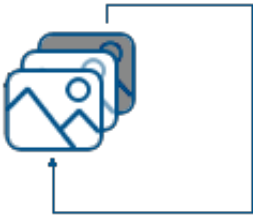
The mvBlueFOX3-2 is the new USB3 Vision family for the new sensor generations. MATRIX VISION's smallest camera offers higher resolutions and frame rates as well as camera based smart features, which reduce the load of the host system.

Your advantages with the mvBlueFOX3



Multiple AOIs in one image.

many applications just need one or several specific parts in an image to be checked. With MultiAOI you only get the relevant image areas which increases the frame rate.



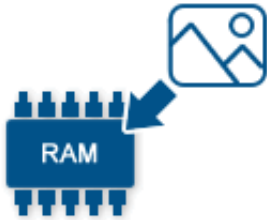
Comfortable acquisition sequences.

With the Sequencer Control you can define [Sequence recording using parameter sets](#) like gain, binning, exposure time, etc. which are then activated by a user-defined trigger source and event.



Huge camera FPGA reduces CPU load of your host system.

Huge camera FPGA with a lot of space for features. We add new features easily via free of charge firmware updates.



You won't lose an image with the internal image memory again.

The image memory buffers images and enables useful features like Record / Playback as well as Pretrigger.



For counting and triggering of events, counters are a handy feature for your application.

You can generate output signals variably, control illumination systems, synchronize several cameras, and a

lot more.



The suitable filter for your lighting situation or environmental condition.

You can choose between daylight cut (Cold Mirror), IR cut (Hot Mirror) or glass (without filter) filter, which can be intergrated.

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- Sensors
- Features
- Accessories
- Image formats
- Applications areas
- Dimensional drawing
- Downloads

CMOS sensors (Sony Pregius - global shutter)

Pregius

Mod	-200		-201		-202		-202		-203		-203		-205		-205		Req uest		-207		-207		Req uest		-208		-208		-212		-212		Req uest		-216		-220		-224		
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																	x			
																	4608			
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xel																				
Max	436.	226.	161.	46.9	119.	55 /	75 /	35 /	74.0	53.5	50.9	46.7	42.4	31.9	30.7	23 /	30.6	23.4	18.6	15.4
. fra	9 / 4	5 / 2	4 /	/	2 /	55 /	80 /	35 /	/	/	/	/	/ 47	/	/ 34	23 /	/	/	/	/
me	36.9	26.5	164	46.9	123	199	276	86	74.0	60.2	50.9	48.0 /		31.9 /	12	45	33.0	26.3	20.9	17.6
rate	/ 43	/	/	/	/				/	/	/	/	168 /	62	2.8		/ 62	/	/	/
	6.9	505	164	46.9	372				135	214	131	158						93.8	74.6	61.9
3																				
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or	9	9	2	2	8	8			8											1
size																				
Pixe	6.9	3.45	5.86	5.86	3.45	3.45	3.45	3.45	2.74	4.5	4.5	2.74	3.45	3.45	3.45	3.45	2.74	2.74	2.74	2.74
l size																				
[µm]																				
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time																				
AD	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
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DR ⁴	74.2	71.4	66.4	73.0	71.1	71.3	71.2	71.3	70.3	71.7	71.8	70.2	71.1	71.0	70.9	71.0	70.1	70.6	70.7	70.4
EM	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/	G/
VA	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
1288																				
Pipe lined global shutter in trigger mode	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Manufac- turer	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony	Sony
Sens or	IMX 287	IMX 273	IMX 174	IMX 249	IMX 252	IMX 265	IMX 250	IMX 264	IMX 547	IMX 420	IMX 428	IMX 546	IMX 255	IMX 267	IMX 253	IMX 304	IMX 545	IMX 542	IMX 541	IMX 540

¹ G = Gray, C = Color, E = Gray & Infrared Enhanced

² Data of gray scale version

³ streaming / [Burst mode](#) / Max. streaming depending on sensor either with 2x2 Binning or Decimation (Horizontal x Vertical)

⁴ Max. Binning Horizontal / Max. Binning Vertical / Max. Decimation Horizontal / Max. Decimation Vertical. **Note: Not all combinations of binning and decimation values are possible.**

⁵ mvDualADCEnable = On, otherwise 12

⁶ EMVA1288 measurement data of gray scale version

CMOS sensors (Sony Starvis - rolling shutter)

STARVIS

CMOS Model	mvBlueFOX3	-2064	-2124r	-2205
Availability to order		✓	✓	✓
Variant ¹		G / C	G / C	G / C
Resolution ²		3096 x 2080	4064 x 3044	5544 x 3692
MPixel		6.4	12.4	20.5
Max. frame rate [Hz] ³		59 / 60 / 60	30.7 / 35.4 / 35.4	18.5 / 21.98 / 52
Binning ⁴		16 / 16 / 16 / 16	16 / 16 / 16 / 16	16 / 16 / 16 / 16
Shutter		Rolling Shutter / Global Reset	Rolling Shutter / Global Reset	Rolling Shutter / Global Reset
Sensor size		1/1.8	1/1.7	1
Pixel size [µm]		2.4	1.85	2.4
Exposure time		70 µs - 20 s	110 µs - 20 s	490 µs - 20 s
ADC resolution / output		12	12	12
Spectral sensitivity		/	/	/
SNR _{max} ⁴		41.6	40.3	41.6
DR ⁴		71.6	69.2	71.5
EMVA 1288		G / C	G / C	G / C
Manufacturer		Sony	Sony	Sony
Sensor		IMX178	IMX226	IMX183

¹ G = Gray, C = Color, E = Gray & Infrared Enhanced

² Data of gray scale version

³ streaming / [Burst mode](#) / Max. streaming depending on sensor either with 2x2 Binning or Decimation (Horizontal x Vertical)

⁴ Max. Binning Horizontal / Max. Binning Vertical / Max. Decimation Horizontal / Max. Decimation Vertical. **Note: Not all combinations of binning and decimation values are possible.**

⁵ mvDualADCEnable = On, otherwise 12

⁶ EMVA1288 measurement data of gray scale version

CMOS sensors (Sony Polarsens - global shutter)

Polarsens

CMOS	mvBlueFOX3
Model	-2051p
Availability to order	✓
Variant ¹	G / C
Resolution ²	2464 x 2056
MPixel	5.1
Max. frame rate [Hz] ³	75 / 80 / 80
Binning ⁴	1 / 1 / 1 / 1
Shutter	Global
Sensor size	2/3
Pixel size [µm]	3.45
Exposure time	10 µs - 20 s
ADC resolution / output	12
Spectral sensitivity	/
SNR _{max} ⁴	40.2
DR ⁴	71.2
EMVA 1288	G / C
Pipelined global shutter in trigger mode	✓
Manufacturer	Sony
Sensor	IMX250 _POL

¹ G = Gray, C = Color, E = Gray & Infrared Enhanced

² Data of gray scale version

³ streaming / [Burst mode](#) / Max. streaming depending on sensor either with 2x2 Binning or Decimation (Horizontal x Vertical)

⁴ Max. Binning Horizontal / Max. Binning Vertical / Max. Decimation Horizontal / Max. Decimation Vertical. **Note: Not all combinations of binning and decimation values are possible.**

⁵ mvDualADCEnable = On, otherwise 12

⁶ EMVA1288 measurement data of gray scale version

- USB 3.2 Gen 1 (5 GBit/s)
- Distances up to 8 meters (more with active repeater)
- C-mount