mvBlueFOX

Industrial USB 2.0 CCD & CMOS cameras

The birth of new visions

www.matrix-vision.de

- **compact industrial CCD & CMOS camera series with USB 2.0**
- **high quality sensors from VGA up to 5 megapixels**
- **FPGA onboard**
- **8 MB memory / up to 12 bits ADC**
- **integrated color conversion and preprocessing**
- **PLC-type real-time sequencer (HRTC)**

mvBlueFOX

more and up-to-date infos see ▼

www.matrix-vision.com/mvBlueFOX

The mvBlueFOX is a compact industrial CCD & CMOS camera solution for any PC with USB ports.

A superior image quality makes it suited for most applications. The driver in combination with the FPGA represents a perfect team which reduces the PC load to a minimum during preprocessings like Bayer color conversion. The standard Hi-Speed USB interface guarantees an easy integration without any additional interface board.

Hardware

- USB interface (up to 480 Mbit/s with Hi-Speed USB)
- CCD versions are also USB 1.1 compatible
- lossless image transfer and bus bandwidth via USB bulk transfer method
- digital I/O opto-isolated:
  - 2 inputs (trigger) logic / PLC level
  - 2 outputs (strobe) 30 V / 100 mA
- connectors:
  - USB type B USB
  - Binder 4-pin with lock USB
  - Sub-D 9-pin male digital I/O
- Hardware Real-Time Controller (HRTC) for time critical I/O and acquisition control by defining a sequence of operating steps
- CCD sensors with full frame shutter
- C-mount, CS-mount or optional S-mount
- back-focus-adjustment
- ADC resolution: up to 12 bits (transfer 10/8 bits)
- progressive scan
- partial scan for faster chart acquisition
- flexible binning modes to e.g. increase the frame rate
- horizontal and vertical mirroring, sharpening and Bayer color conversion
- automatic gain control (AGC)
- automatic exposure control (AEC)
- expose and image transfer possible at the same time
- all parameters adjustable via bus interface
- weight without lens: approx. 120 g
- bus powered < 2.5 W
- size without C-mount lens (w x h x l): 38.8 x 38.8 x 58.5 mm
- permissible ambient temperature 0..45 °C

Software

- Windows® and Linux® drivers, 32bit/64bit (mvIMPACT Acquire)
- DirectShow® driver
- comes with free mvIMPACT Base
- supported third-party software see website

Application areas

- machine
- robotica
- surveilliance
- medical imaging
- microscopy

Available sensors

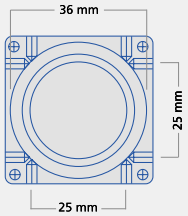
Model name (CCD)	mvBlueFOX-220		mvBlueFOX-220a		mvBlueFOX-221		mvBlueFOX-223		mvBlueFOX-224	
Model variant	G Gray	C Color	G Gray	C Color	G Gray	C Color	G Gray	C Color	G Gray	C Color
resolution of active area	640 x 480		640 x 480		1024 x 768		1360 x 1024		1600 x 1200	
maximum frame rate	60 Hz		100 Hz		39 Hz[1)]		20 Hz		16 Hz	
transfer type	full frame		full frame		full frame		full frame		full frame	
sensor category	1/4 "		1/3 "		1/3 "		1/3 "		1/1.8 "	
pixel size in [µm] (width x height	5.6 x 5.6		7.4 x 7.4		4.65 x 4.65		4.65 x 4.65		4.4 x 4.4	
readout type	progressive		progressive		progressive		progressive		progressive	
integrations time	44 µs - 10 s		26 µs - 10 s		44 µs - 10 s		33 µs - 10 s		30 µs - 10 s	
overlap capabilit.	yes		yes		yes		yes		yes	
USB type	USB 1.1 / USB 2.0		USB 1.1 / USB 2.0		USB 1.1 / USB 2.0		USB 1.1 / USB 2.0		USB 1.1 / USB 2.0	
sensor manufacturer	Sony		Sony		Sony		Sony		Sony	
sensor name	ICX098AL/BL		ICX424AL/AQ		ICX204AL/AQ		ICX267AL/AQ		ICX274AL/AQ	

[1)] With max. frame rate, image quality losings might be occur.

Model name (CMOS)	mvBlueFOX-200w		mvBlueFOX-202a		mvBlueFOX-205	
Model variant	G Gray	C Color	G Gray	- -	G Gray	C Color
resolution of active area	752 x 480		1280 x 1024		2593 x 1944	
maximum frame rate	60 Hz		25 Hz		5.8 Hz	
shutter type	full frame/rolling		rolling		global reset/rolling	
sensor category	1/3 "		1/2 "		1/2.5 "	
pixel size in [µm] (width x height	6 x 6		5.2 x 5.2		2.2 x 2.2	
integrations time	10 µs - 10 s		100 µs - 10 s		10 µs - 10 s	
overlap capabilit.	yes		yes		yes	
USB type	USB 1.1 / USB 2.0		USB 1.1 / USB 2.0		USB 1.1 / USB 2.0	
sensor manufacturer	Aptina		Aptina		Aptina	
sensor name	MT9V034		MT9M001		MT9P031	

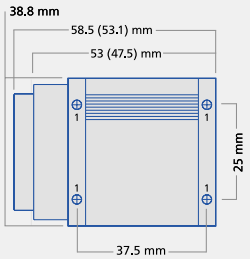
Dimensional drawing

front view



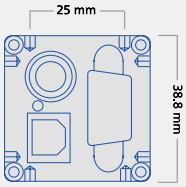
diameter: 1: M2.5 x 4 mm

side view



CCD (CMOS)

back view



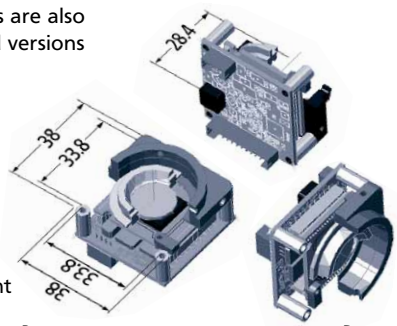
Accessories

KS-USB2-AB-EXT	USB 2.0 extension A-A, length 5 m
KS-USB2-AB	USB 2.0 cable A-B, length up to 5 m
KS-USB2-B4ST	USB 2.0 cable Binder 4 pol to USB2-A, length up to 5 m
KS-USB2-B4ST SLK	USB 2.0 cable Binder 4 pol to USB2-A, length up to 5 m, suitable for drag chain
KS-USB2-B4ST-AK90	USB 2.0 cable Binder 4 pol to USB2-A, length up to 5 m, Binder bend by 90°
KS-USB2-B4ST-AK90 SLK	USB 2.0 cable Binder 4 pol to USB2-A, length up to 5 m, Binder bend by 90°, suitable for drag chain
MV-Tripod Adapter	tripod adapter

Cables for industrial use with screwlock are available.

mvBlueFOX modules

The mvBlueFOX cameras are also available as single-board versions without housing.
Notation:
e.g. mvBlueFOX-M120C for module,
CCD, 640 x 480, color.



CMOS version with C-mount

mvIMPACT Base package

- image processing
- display graphic overlay
- image data handling
- file operations

FOR FREE!

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