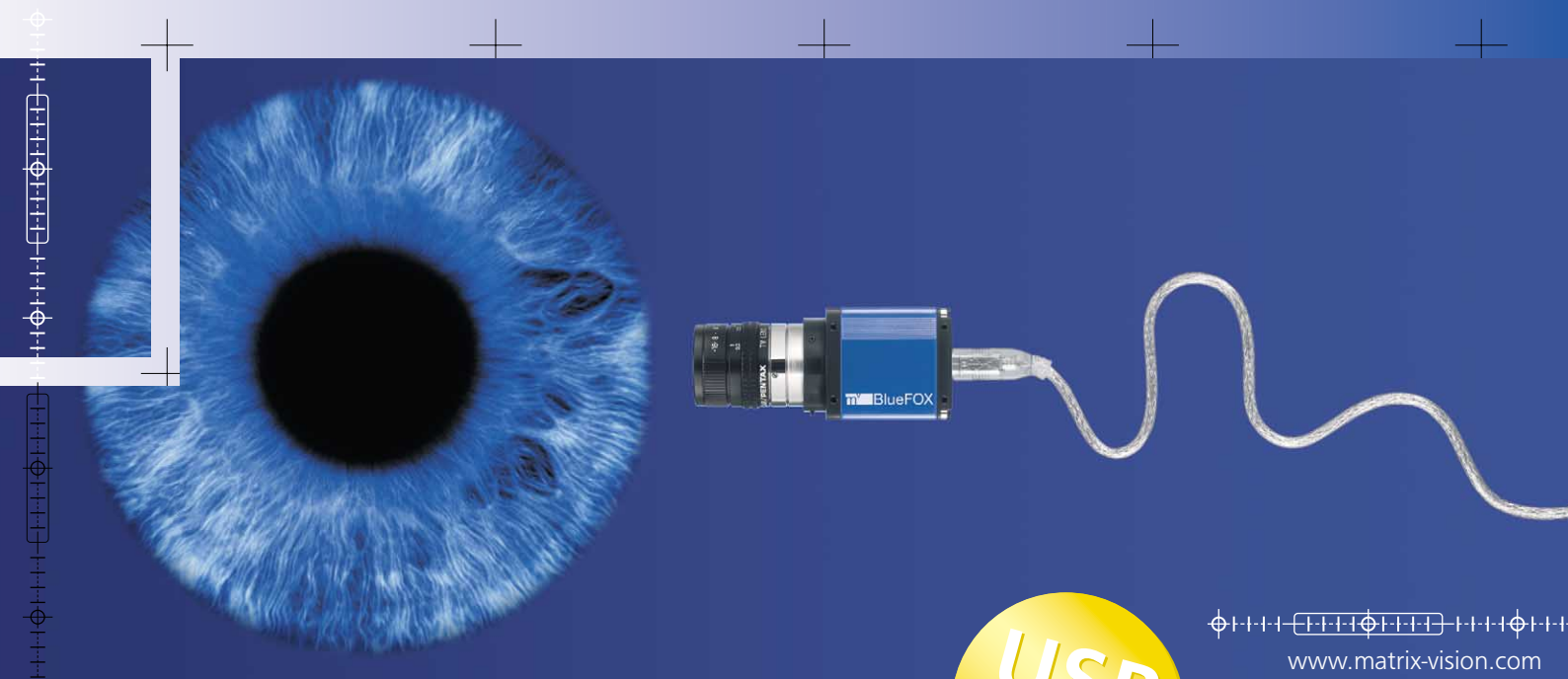




en

mvBlueFOX

Industrial USB CCD & CMOS camera series



www.matrix-vision.com

The birth of new visions

Universal camera platform
with USB interface



RECOGNIZE ANALYZE DECIDE

m^v **MATRIX**
VISION



The mvBlueFOX USB camera family is the result of an almost natural adaptation to numerous potential applications. Accordingly, there is a variety of technical models with different forms.

This enables our customers to combine flexible modular technology with various shapes. Our OEM customers also appreciate this, whether with housing, as board-level, or single-board, all models have one thing in common: perfectly coordinated, freely selectable configurability.

Evolution at work.

We are developing the mvBlueFOX continuously. Custom specific demands are the basis for our technicians and engineers. Many new ideas are generated which we bring to life as powerful and smart solutions.



mvBlueFOX in action.

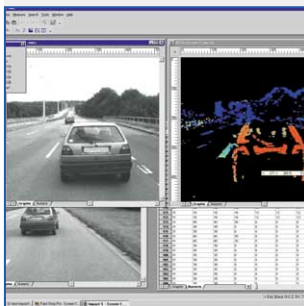


Industry, science and research are using the mvBlueFOX cameras in several applications.

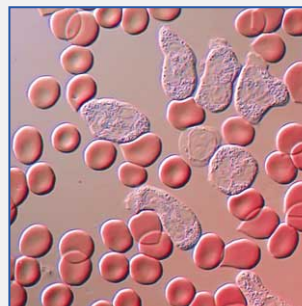
◀ **Microscopy:** mvBlueFOX for documentation and automated laboratory evaluation.



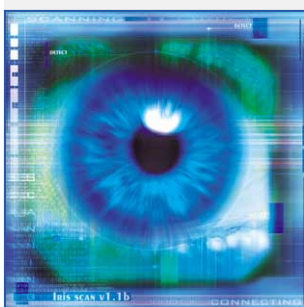
◀ **Surveillance:** mvBlueFOX used in access control devices in buildings. Crucial data transmission security is ensured by the internal image memory.



◀ **Traffic:** mvBlueFOX as a highly sensitive sensor for autonomous driving. The robust design of the camera won't let you down even off-road.



◀ **Medicine:** mvBlueFOX as a powerful optical system for analyzing blood samples. The open hardware platform enables fast adaptation of customer-specific products.

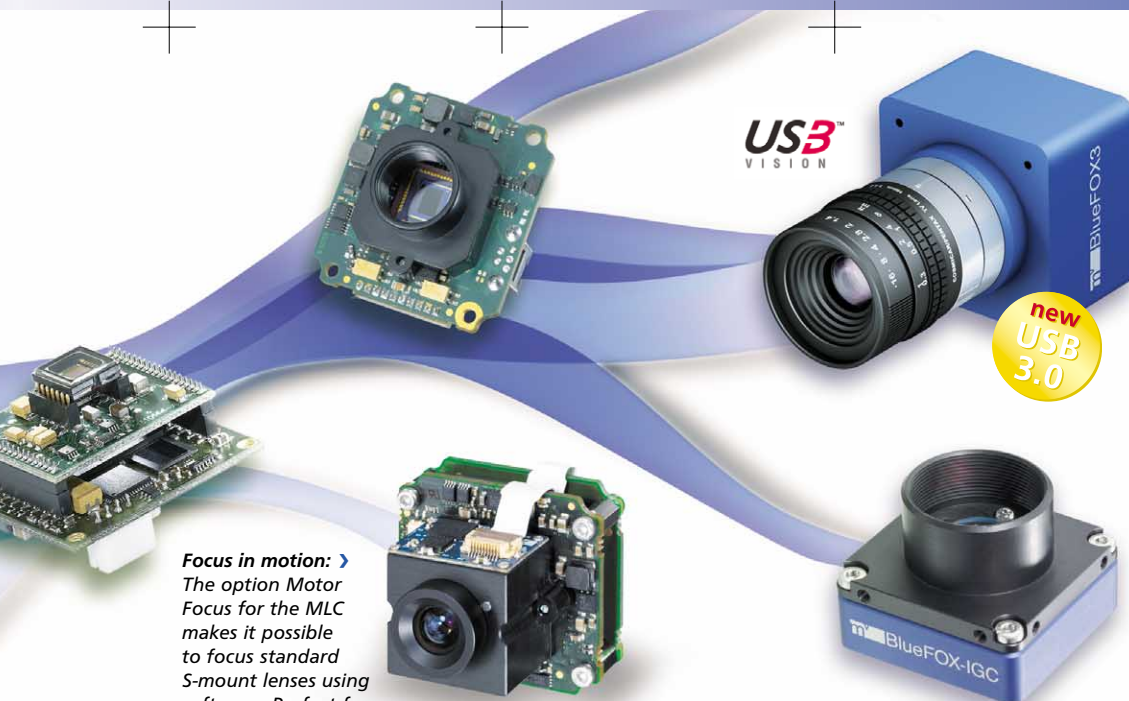


◀ **Biometrics:** mvBlueFOX for the identification of individual personal features. Versatile control options and an easy process integration create the basis for new ideas.



◀ **Automotive:** mvBlueFOX in 3D hand scanners for fast quality checks.





Focus in motion: >

The option Motor Focus for the MLC makes it possible to focus standard S-mount lenses using software. Perfect for applications with different working distances or auto focus. The system works with high accuracy and absolute positioning and can be used in industrial environments.

New independence through standards.

Our new USB 3.0 camera series, mvBlueFOX3, enables the combination of higher image resolutions with high frame rates as well as the synchronous operation of several cameras without image loss via a USB port.

For the users, the USB3 Vision standard offers more flexibility and security of investment. Benefit from our know-how as a member of the USB3 Vision standard committee.

Accessories just in case.

■ USB- and I/O cables

- ▶ linear, bent, pluggable, with lock screws, suitable for drag chain



■ Lens holders

- ▶ C-mount
- ▶ CS-mount
- ▶ S-mount

■ Lenses

- Filters
- Lighting systems



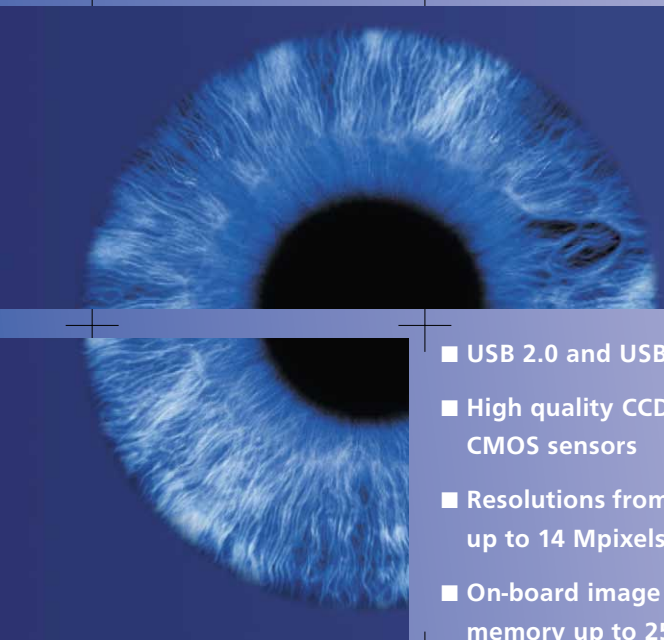
Software to go.

Fast adaptability also means feeling comfortable in other environments.



For this reason we offer platform-independent support for your application with suitable drivers for Windows® and Linux® systems (embedded systems) with 32 and 64 bit architecture. In order to integrate your system as quickly as possible, we set up a comprehensive image processing library for our customers. Third-party software can be integrated into the open system as well.

▼ more and up-to-date infos see
www.matrix-vision.com/mvbluefox



- USB 2.0 and USB 3.0
- High quality CCD / CMOS sensors
- Resolutions from VGA up to 14 Mpixels
- On-board image memory up to 256 MB
- Hardware LUT
- On-board FPGA
- Micro-PLC
- Digital I/Os
- Power supply via bus or externally

Legal notice:

The contents of this brochure are intended to provide information only and to show possible examples. We reserve the right to change technical data and construction at any time without prior notice. The technical specifications of customer systems and of our current products have to be clarified when ordering.

Date 10/2012



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info@matrix-vision.de

Ideas and products Made in Germany

In the industrial image processing area, MATRIX VISION has become an important partner for customers world-wide.

Our strong-points

Aside from our extensive range of standard products we develop custom-specific solutions which provide maximum utility for the user as a result of continuous improvement.

mvBlueFOX3

Technical Details



Sensors

mvBlueFOX3		Resolution (H x V pixels)	Sensor size (optical)	Pixel size (µm)	Frame rate	Sensor technology	Readout type	ADC resolution / output in bits	Sensor
-1003	G/C	648 x 488	1/3"	7.4 x 7.4	480	CMOS	Global	12 → 8/10/(12)	CMOSIS CMV300
-1013	G/C	1280 x 1024	1/1.8"	5.3 x 5.3	60	CMOS	Global	10 → 8/10/(12)	E2V EV76C560
-1013	GE*	1280 x 1024	1/1.8"	5.3 x 5.3	60	CMOS	Global	10 → 8/10/(12)	E2V EV76C661
-1020	G/C	1600 x 1200	1/1.8"	4.5 x 4.5	60	CMOS	Global	10 → 8/10/(12)	E2V EV76C570
-1022	G/C	2048 x 1088	2/3"	5.5 x 5.5	300 / 150**	CMOS	Global	10 → 8/10/(12)	CMOSIS CMV2000
-1022	GE*	2048 x 1088	2/3"	5.5 x 5.5	300 / 150**	CMOS	Global	10 → 8/10/(12)	CMV2000A12
-1031	C	2052 x 1536	1/3"	2.2 x 2.2	30	CMOS	Rolling	12 → 8/10/(12)	Aptina AR0331
-1042	G/C	2048 x 2048	1"	5.5 x 5.5	150 / 75**	CMOS	Global	10 → 8/10/(12)	CMOSIS CMV4000
-1042	GE*	2048 x 2048	1"	5.5 x 5.5	150 / 75**	CMOS	Global	10 → 8/10/(12)	CMV4000A12
-1100	G/C	3856 x 2764	1/2.35"	1.67 x 1.67	8.7	CMOS	Rolling	12 → 8/10/(12)	Aptina MT9J003
-1140	C	4384 x 3288	1/2.3"	1.4 x 1.4	6.3	CMOS	Rolling	12 → 8/10/(12)	Aptina MT9F002

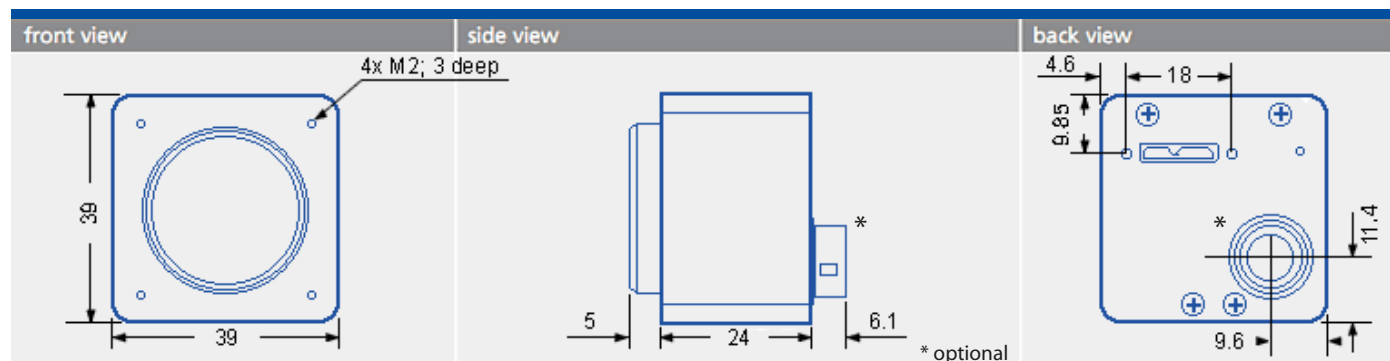
* Infrared enhanced
** into memory / streaming

Note: Frame rate of CMOSIS sensor CMV300 is limited at the moment

Hardware Features

Protocol	Compliant to USB3 Vision	
Interface	USB 2.0 / 3.0 (up to 480 Mbit/s / up to 5 Gbit/s)	
Image formats	Mono8/10/12/14/16 BayerGR8/10/12/16, RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422/444Packed, YUV422_YUYVPacked onboard color processing	
Triggers	External, software based or free run	
Size w/o lens (W x H x L) Weight w/o lens	39 x 39 x 24 mm approx. 49 g	
Permissible ambient temperature	Operation:	0 .. 45 °C / 30 to 80 % RH
	Storage:	-20 .. 60 °C / 20 to 90 % RH
Lens mounts	C-mount, CS-mount	
Digital I/Os	2 opto-isolated inputs / 4 opto-isolated outputs (freely configurable) as an option	
Image memory	256 MBytes	
Flash (firmware, calibration, user data)	16 MBytes	
Conformity	CE, FCC, RoHS	
Driver	mvIMPACT Acquire SDK or any USB3 Vision compliant interface or vision library	
Operating systems	Windows®, Linux® - 32 bit and 64 bit	
Special features	Burst mode, onboard color processing, Micro-PLC, single-board variant, opt. external industrial power (12 .. 24 V), robust housing with tripod mounting holes	

Dimensions (in mm)



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Subject to change without notice, Date 07/2013

mvBlueFOX-IGC / -MLC

Technical Details



Sensors



mvBlueFOX-IGC mvBlueFOX-MLC		Resolution (H x V pixels)	Sensor size (optical)	Pixel size (µm)	Frame rate	Sensor technology	Readout type	ADC resolution / output in bits	Sensor
-200w ^{1 2}	G/C	752 x 480	1/3"	6 x 6	90	CMOS	Global	10 → 10 / 8	Aptina MT9V
-202b	G/C	1280 x 960	1/3"	3.75 x 3.75	24.6	CMOS	Global	10 → 10 / 8	Aptina MT9M
-202d ¹	G/C	1280 x 960	1/3"	3.75 x 3.75	24.6	CMOS	Rolling	10 → 10 / 8	Aptina MT9M
-205 ²	G/C	2592 x 1944	1/2.5"	2.2 x 2.2	5.8	CMOS	Global Reset	10 → 10 / 8	Aptina MT9P

¹High Dynamic Range (HDR) mode supported

²Software trigger supported

Sample: **mvBlueFOX-IGC200wG** means version with housing and 752 x 480 CMOS gray scale sensor.

mvBlueFOX-MLC200wG means single-board version without housing and with 752 x 480 CMOS gray scale sensor.

Hardware Features

Gray scale / Color	Gray scale (G) / Color (C)	
Interface	USB 2.0 (up to 480 Mbit/s)	
Image formats	Mono8, Mono10, BayerGR8, BayerGR10	
Triggers	External hardware based (optional), software based (depending on the sensor) or free run	
Size w/o lens (W x H x L) Weight w/o lens	mvBlueFOX-IGC:	39.8 x 39.8 x 16.5 mm approx. 10 g
	mvBlueFOX-MLC:	35 x 33 x 25 mm (without lens mount) approx. 80 g
Permissible ambient temperature	Operation:	0 .. 45 °C / 30 to 80 % RH
	Storage:	-20 .. 60 °C / 20 to 90 % RH
Lens mounts	Back focus adjustable C/CS-mount lens holder / C-mount, CS-mount or optional S-mount	
Digital I/Os	mvBlueFOX-IGC (optional) mvBlueFOX-MLC	1 / 1 opto-isolated 1 / 1 opto-isolated or 2 / 2 TTL compliant
Conformity	CE, FCC, RoHS	
Driver	mviMPACT Acquire SDK	
Operating systems	Windows®, Linux® - 32 bit and 64 bit	
Special features	Micro-PLC, automatic gain / exposure control, binning, screw lock connectors	

Dimensions -IGC Version (in mm)

front view	side view	back view



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mvBlueFOX / -M

Technical Details



Sensors

mvBlueFOX		Resolution (H x V pixels)	Sensor size (optical)	Pixel size (µm)	Frame rate	Sensor technology	Readout type	ADC resolution / output in bits	Sensor
-220 / -M120	G/C	640 x 480	1/4"	5.6 x 5.6	60	CCD	Global	12 → 10	Sony ICX098
-220a / -M120a	G/C	640 x 480	1/3"	7.4 x 7.4	100	CCD	Global	12 → 10	Sony ICX424
-200w / -M100w	G/C	752 x 480	1/3"	6 x 6	90	CMOS	Global	10 → 10 / 8	Aptina MT9V
-221 / -M121	G/C	1024 x 768	1/3"	4.65 x 4.65	39	CCD	Global	12 → 10	Sony ICX204
-202a / -M102a	G	1280 x 1024	1/2"	5.2 x 5.2	25	CMOS	Rolling	10 → 10 / 8	Aptina MT9M
-223 / -M123	G/C	1360 x 1024	1/2"	4.65 x 4.65	20	CCD	Global	12 → 10	Sony ICX267
-224 / -M124	G/C	1600 x 1200	1/1.8"	4.4 x 4.4	16	CCD	Global	12 → 10	Sony ICX274
-205 / -M105	G/C	2592 x 1944	1/2.5"	2.2 x 2.2	5.8	CMOS	Global Reset	10 → 10 / 8	Aptina MT9P

Sample: **mvBlueFOX-200wG** means standard version with 752 x 480 CMOS gray scale sensor.

mvBlueFOX-M200wG means module version without housing and with 752 x 480 CMOS gray scale sensor.

Hardware Features

Gray scale / Color	Gray scale (G) / Color (C)	
Interface	USB 2.0 (up to 480 Mbit/s) / USB 1.1 compatible	
Image formats	Mono8, Mono10, BayerGR8, BayerGR10	
Triggers	External, software based or free run	
Size w/o lens (W x H x L) Weight w/o lens	mvBlueFOX:	38.8 x 38.8 x 42.5 mm approx. 120 g
	mvBlueFOX-M:	38.8 x 38.8 x 34 mm (CCD with C-mount) approx. 17 g
Permissible ambient temperature	Operation:	0 .. 45 °C / 30 to 80 % RH
	Storage:	-20 .. 60 °C / 20 to 90 % RH
Lens mounts	Back focus adjustable C/CS-mount lens holder / C-mount, CS-mount or optional S-mount	
Digital I/Os	mvBlueFOX:	2 opto-isolated inputs / 2 opto-isolated outputs
	mvBlueFOX-M:	4 LVTTTL inputs / 4 LVTTTL outputs
Conformity	CE, FCC, RoHS	
Driver	mviIMPACT Acquire SDK	
Operating systems	Windows®, Linux® - 32 bit and 64 bit	
Special features	Micro-PLC, automatic gain / exposure control, binning, screw lock connectors	

Dimensions Standard Version (in mm)

front view	side view	back view



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mvBlueCOUGAR-X

Next generation GigE camera



www.matrix-vision.de

Mini size maX performance

Universal Gigabit Ethernet interface camera platform
with GigE Vision® and GenICam™ standards



GENiCAM



RECOGNIZE ANALYZE DECIDE

mv MATRIX
VISION

Latest standards for more flexibility.

Thanks to the current GigE Vision® and GenICam™ standards and its compact size, the next generation Gigabit Ethernet camera family mvBlueCOUGAR-X can be integrated into various applications. With data rates of up to 1,000 Mbit/s and cable lengths up to 100 meters, the mvBlueCOUGAR-X is designed for Machine Vision tasks with high resolution and low latencies and also for tasks with precise and optimized images like in life science and medicine. The core of the camera consists of groundbreaking smart features to reduce the load of the host system – for more reliable and universal applications.

Easy integration – with GigE Vision®.

**Ultra compact by using state-of-the-art components –
ultra compatible with current GigE Vision® and GenICam™
standards for platform and manufacturer-independent usage.**

More performance, more security, more flexibility: The smart features of the mvBlueCOUGAR-X.

Reduces load of the host system

- Flat field correction
- Bayer demosaicing
- Color correction
- Real-time image acquisition control



www.matrix-vision.com/cougar-features.html

Reliable applications

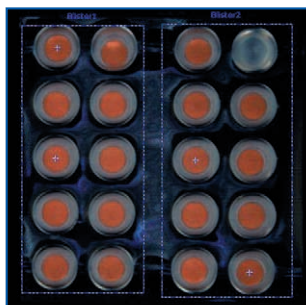
- Very large image memory of 64 MB (as FiFo buffer or for camera record mode)
- Resend mechanisms (lossless image transfers)
- Bandwidth control (indispensable in multi-camera applications)
- Temperature sensors (enhanced temperature range) and timestamps (camera synchronization)

Universal applications

- Micro-PLC (e.g. for pulse width modulation)
- Different exposure series
- Different lens holders and filters
- Models with IP65 or for higher environmental temperatures



mvBlueCOUGAR in action.



**Many areas are
using the flexible
possibilities of the
mvBlueCOUGAR-X.**

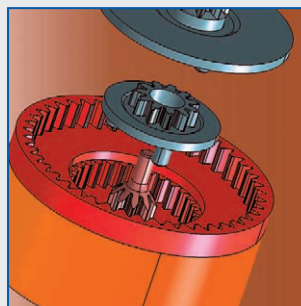
◀ **Pharmacy:** mvBlueCOUGAR-X checking packaging within the pharmaceutical field.



◀ **Automation:** mvBlueCOUGAR-X in multi-camera operation in the field of book-binding. The open design of the mvBlueCOUGAR-X with smart and robust digital I/Os makes it possible to integrate customer-specific extensions like an ultra-bright flash illumination.



◀ **Traffic:** mvBlueCOUGAR-X used in traffic control systems. The mvBlueCOUGAR-X sensors are characterized by their high dynamic range. This ensures the best results even in varying lighting conditions.



◀ **Measurement technology:** mvBlueCOUGAR-X as a compact optical system in coordinate measurement machines. The integrated temperature sensors in combination with the compact size, high quality images, and high sensitivity make the camera ideal for integration.



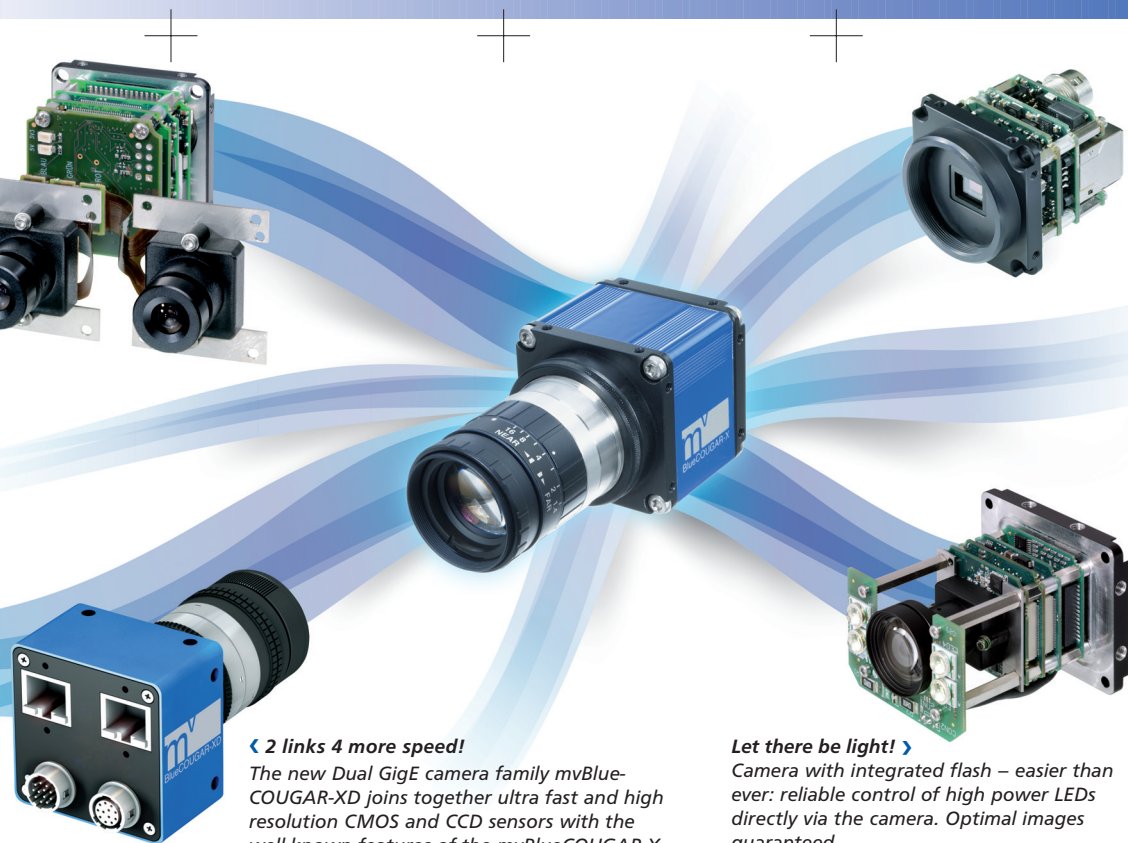
◀ **Safety:** mvBlueCOUGAR-X provides more safety at construction sites. Reliable person tracking in 3D – regardless of the environmental lighting. The driver will be alerted within 300 ms after the event.



◀ **Automotive:** mvBlueCOUGAR-X reading Data Matrix codes on plastic components.



www.matrix-vision.com/cougar-stories.html



Modular, open and future-proof.

There is a wide range of high quality CCD and CMOS sensors available for different applications – from VGA to 5 megapixels – even in the basic version of the mvBlueCOUGAR-X. The open design makes it possible to adapt and enhance the camera easily. Board-level versions can be configured and extended individually to meet demands and tasks.

With these features, the mvBlueCOUGAR-X is among the most flexible and upgradable systems on the image processing market with all advantages of the GigE Vision® and GenICam™ standards.

< 2 links 4 more speed!

The new Dual GigE camera family mvBlueCOUGAR-XD joins together ultra fast and high resolution CMOS and CCD sensors with the well-known features of the mvBlueCOUGAR-X camera in the smallest housing in its class.

Let there be light! >

Camera with integrated flash – easier than ever: reliable control of high power LEDs directly via the camera. Optimal images guaranteed.

Accessories making it easy.

- Gigabit Ethernet and I/O cables
 - ▶ bent
 - ▶ with lock screws
 - ▶ suitable for drag chain
- Lens holders
 - ▶ C-mount
 - ▶ CS-mount
 - ▶ S-mount
- Lenses
 - Filters
 - Lighting systems
- Power supply with or without I/O cable

Software to go.

Full platform-independent support of your software environment.



Including a comprehensive software package with standard API (mvIMPACT Acquire), tools and camera drivers. Third-party software can be integrated into the open system as well.

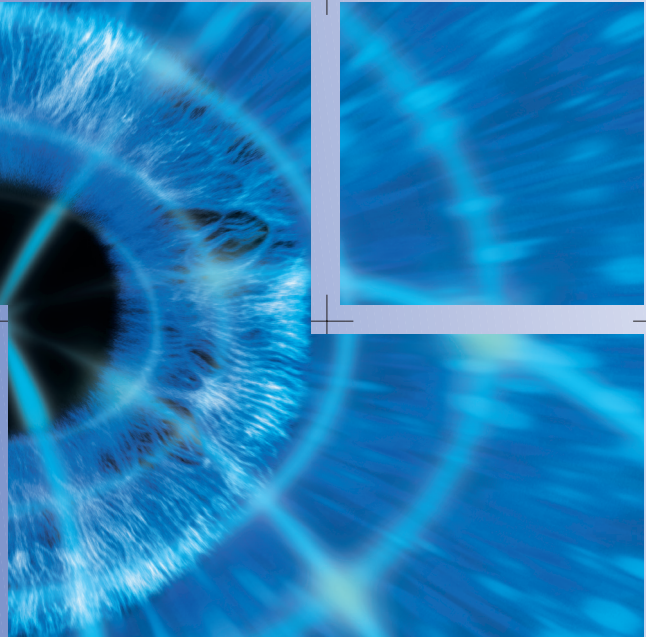
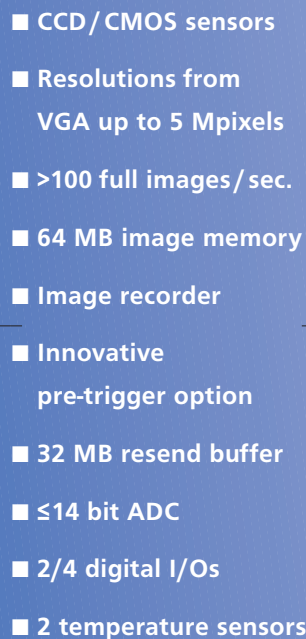
Hardware to check.

Flexible testing and setting options with the mv-X I/O-Box.



The box for all developers to configure the mvBlueCOUGAR camera in testing environments: Connecting, testing, looping into systems and mixing connection variants selectively. Let's go!





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Date 11/2011



- ▶ Real-time flat field correction (14 bit ▶ 14 bit)
- ▶ Micro-PLC (counter/timer and logical operators)
- ▶ Bandwidth control
- ▶ Running frame average (innovative noise reduction with motion compensation)

In the industrial image processing area, MATRIX VISION has become an important partner for customers world-wide.

Aside from our extensive range of standard products we develop custom-specific solutions which provide maximum utility for the user as a result of continuous improvement.

mvBlueCOUGAR-X

Technical Details



GigE
VISION

GEN*i*CAM

Sensors

mvBlueCOUGAR-X		Resolution (H x V pixels)	Sensor size (optical)	Pixel size (µm)	Frame rate	Sensor technology	Readout type	ADC resolution / output in bits	Sensor
-120a	G/C	640 x 480	1/3"	7.4 x 7.4	104	CCD	Global	14 → 14/12/8	Sony ICX424
-120b	G/C	640 x 480	1/2"	9.9 x 9.9	104	CCD	Global	14 → 14/12/8	Sony ICX414
-120d	G/C	776 x 580	1/2"	8.3 x 8.3	87	CCD	Global	14 → 14/12/8	Sony ICX415
-100w*	G/C	752 x 480	1/3"	6 x 6	117	CMOS	Global	10 → 12/10/8	Aptina MT9V
-122	G/C	1280 x 960	1/3"	3.75 x 3.75	31	CCD	Global	14 → 14/12/8	Sony ICX445
-102b	G/C	1280 x 960	1/3"	3.75 x 3.75	40.6	CMOS	Global	10 → 12/10/8	Aptina MT9M
-102d*	G/C	1280 x 960	1/3"	3.75 x 3.75	40.6	CMOS	Rolling	10 → 12/10/8	Aptina MT9M
-102e**	G/C	1280 x 1024	1/1.8"	5.3 x 5.3	60	CMOS	Global	10 → 10/8	E2V EV76C560
-123	G/C	1360 x 1024	1/2"	4.65 x 4.65	30	CCD	Global	14 → 14/12/8	Sony ICX267
-104e	G/C	1600 x 1200	1/1.8"	4.5 x 4.5	41.4	CMOS	Global	10 → 10/8	E2V EV76C570
-124	G/C	1600 x 1200	1/1.8"	4.4 x 4.4	28	CCD	Global	14 → 14/12/8	Sony ICX274
-125a	G/C	2448 x 2050	2/3"	3.45 x 3.45	10	CCD	Global	14 → 14/12/8	Sony ICX655
-225	G/C	2448 x 2050	2/3"	3.45 x 3.45	16	CCD	Global	14 → 14/12/8	Sony ICX625
-105	G/C	2592 x 1944	1/2.5"	2.2 x 2.2	14.4	CMOS	Global Reset	12 → 12/10/8	Aptina MT9P
-1010	G/C	3856 x 2764	1/2.35"	1.67 x 1.67	8.7	CMOS	Global Reset	12 → 12/10/8	Aptina MT9J

* High Dynamic Range (HDR) mode supported
** Infrared enhanced model -102eGE also available

Hardware Features

Protocol	Compliant to GigE Vision		
Interface	Gigabit Ethernet (1000 Mbit/s with 100 Mbit/s compatibility)		
Image formats	Mono8, Mono12, Mono14, Mono16, Mono12Packed BayerGR8, BayerGR10, BayerGR12, BayerGR16, BayerGR12Packed (GR, RG, GB, BG depends on camera type) RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed, YUV422Packed, YUV422_YUYVPacked, YUV444Packed		
Triggers	External, software based or free run		
Size w/o (W x H x L) Weight w/o lens	39.8 x 39.8 x 35 mm approx. 110 g		
Permissible ambient temperature	Operation:	0 .. 45 °C (-40 .. 65 °C as an option) / 30 to 80 % RH	
	Storage:	-20 .. 60 °C / 20 to 90 % RH	
Lens mounts	Back focus adjustable C/CS-mount lens holder / C-mount, CS-mount or optional S-mount		
Digital I/Os	Standard PoE option:	2 opto-isolated inputs / 4 high-side outputs 2 opto-isolated inputs / 2 opto-isolated outputs	
Conformity	CE, FCC, RoHS, on request: UL, IP65/67		
Driver	mvIMPACT Acquire SDK or any GigE Vision compliant interface		
Operating systems	Windows®, Linux® - 32 bit and 64 bit		
Special features	Frame average, enhanced color and I/O functionality, PoE, automatic gain / exposure control, binning, PLC inputs, pre-trigger recording, internal temperature sensors, FFC, screw lock connectors, video iris		

Dimensions Standard Version (in mm)

front view	side view	back view

mv MATRIX
VISION

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Recognize Analyze Decide

mvBlueCOUGAR-XD

Technical Details



GigE
VISION

GENⁱCAM

Sensors

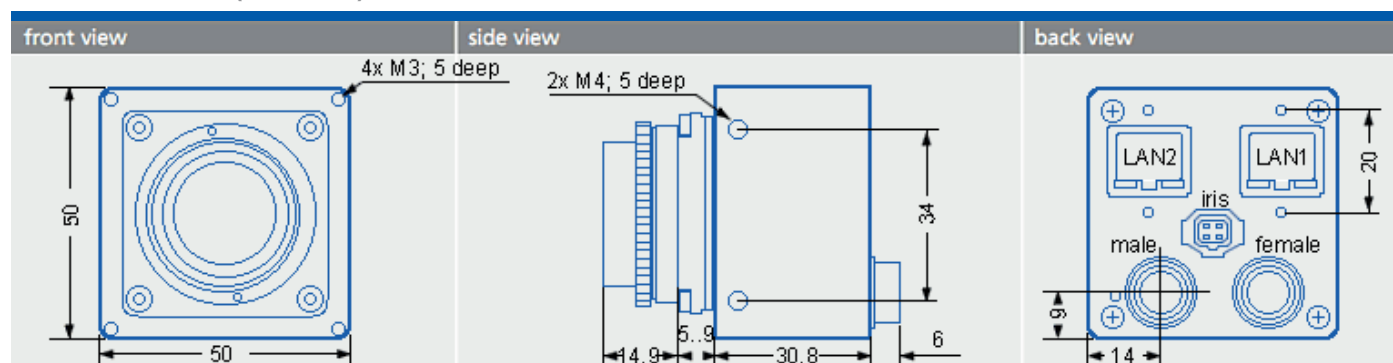
mvBlueCOUGAR-XD		Resolution (H x V pixels)	Sensor size (optical)	Pixel size (µm)	Frame rate	Sensor technology	Readout type	ADC resolution / output in bits	Sensor
-100	G/C	648 x 488	1/3"	7.4 x 7.4	480	CMOS	Global	12 → 10	CMOSIS CMV300
-124a	G/C	1936 x 1460	2/3"	4.54 x 4.54	64.5	CCD	Global	14 → 8..16	Sony ICX674
-104	G/C	2048 x 1088	2/3"	5.5 x 5.5	270 / 110*	CMOS	Global	10 → 16/12/8	CMOSIS CMV2000
-104b	G/C	2048 x 2048	1"	5.5 x 5.5	140 / 58*	CMOS	Global	10 → 10	CMOSIS CMV4000
-126	G/C	2752 x 2208	1"	4.54 x 4.54	33	CCD	Global	14 → 8..16	Sony ICX694
-129	G/C	3384 x 2712	1"	3.7 x 3.7	22.3	CCD	Global	14 → 8..16	Sony ICX814

* into memory / streaming

Hardware Features

Protocol	Compliant to GigE Vision	
Interface	Dual Gigabit Ethernet (2x 1000 Mbit/s with 100 Mbit/s compatibility)	
Image formats	Mono8, Mono12, Mono14, Mono16, Mono12Packed BayerGR8, BayerGR10, BayerGR12, BayerGR16, BayerGR12Packed (GR, RG, GB, BG depends on camera type) RGB8Packed, BGR8Packed, BGRA8Packed, BGR10V2Packed YUV422Packed, YUV422_YUYVPacked, YUV444Packed	
Triggers	External, software based or free run	
Size w/o lens (W x H x L) Weight w/o lens	50 x 50 x 30.8 mm approx. 200 g	
Permissible ambient temperature	Operation:	0 .. 45 °C / 30 to 80 % RH
	Storage:	-20 .. 60 °C / 20 to 90 % RH
Lens mounts	Back focus adjustable C/CS-mount lens holder	
Digital I/Os	2 opto-isolated inputs / 4 high-side outputs	
Image memory	256 MB	
Conformity	CE, FCC, RoHS	
Driver	mvIMPACT Acquire SDK or any GigE Vision compliant interface	
Operating systems	Windows®, Linux® - 32 bit and 64 bit	
Special features	Enhanced color and I/O functionality, automatic gain / exposure control, binning, burst mode, video iris, lens control, pre-trigger recording, internal temperature sensors, screw lock connectors	

Dimensions (in mm)



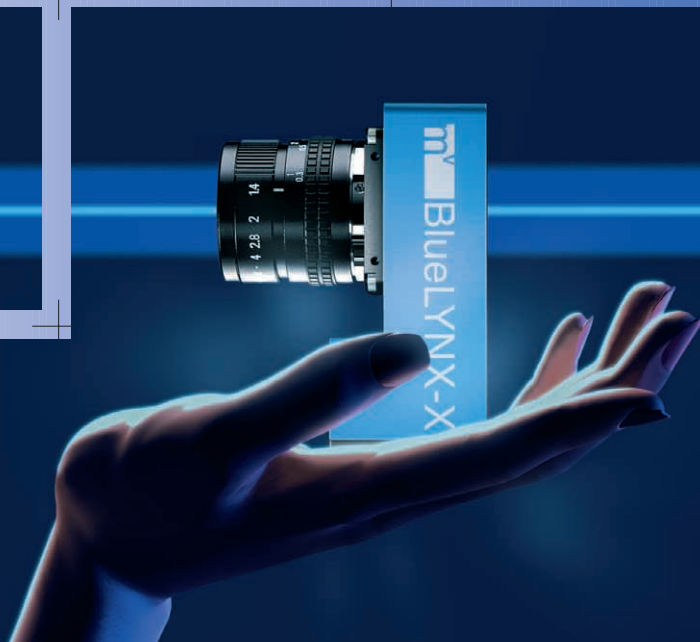
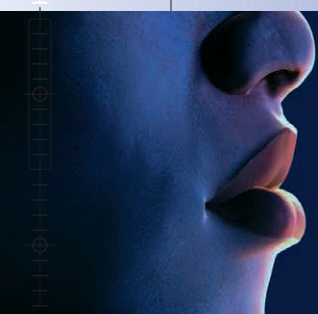
MATRIX
VISION

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Recognize Analyze Decide

mvBlueLYNX-X

Next generation smart camera



www.matrix-vision.de

Vision with intelligence

Compact OMAP™-based image processing system
with integrated LINUX® operating system



RECOGNIZE ANALYZE DECIDE

mv MATRIX
VISION

What makes an industrial camera an intelligent one?
Quite simple: The features of an industrial PC and a frame grabber combined in one small housing. Equipped with a wide range of interfaces to communicate with machines and to connect additional peripherals, as well as a wide selection of CCD and CMOS sensors, you get a compact and smart camera for many Machine Vision applications: the mvBlueLYNX-X.

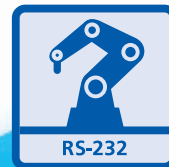
An OMAP-based system with a hybrid dual-core processor (ARM + DSP) ensures integrated image acquisition and processing at extraordinary speeds.

The mvBlueLYNX-X recipe for success: Clever, fast and green.

The mvBlueLYNX-X is the logical extension of intelligent camera development.

Green Automation on-board.

The low power consumption of ≤ 5 Watts makes the mvBlueLYNX-X suitable for green automation applications.

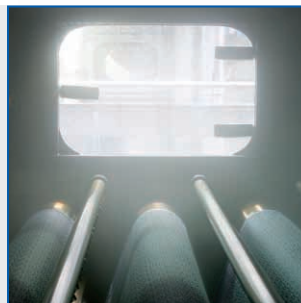


mvBlueLYNX-X in action.



Many areas are using the flexible possibilities of the mvBlueLYNX cameras.

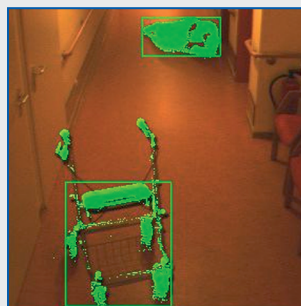
◀ **Machine Vision:** Compact size and low power consumption make integrating the camera easy.



◀ **Textile industry:** The camera works as an optical system for "on the loom inspections" in the textile industry.



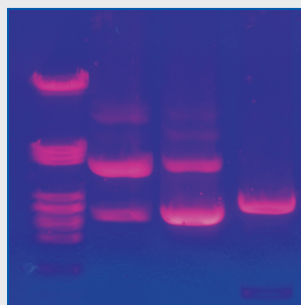
◀ **Robotics:** The smart camera is used to position materials in production. As an autonomous system without any additional PC, a smart camera can simplify the IT infrastructure.



◀ **Safety:** As a closed system, the camera observes corridors and halls and will alarm nursing staff if a person collapses or falls over.

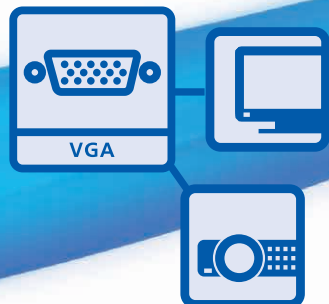


◀ **Health Care:** The camera captures the optical center of the glasses as well as the frame outline and transfers the data to the grinding machine.



◀ **Medicine:** As image subsystem within fully integrated molecular diagnostic device for gel electrophoresis.





www.matrix-vision.com/lynx-features.html

Small camera – many great opportunities.

Despite its small size, the mvBlueLYNX-X offers a wide range of connection possibilities. Besides USB 2.0, USB On-the-go, RS-232 and VGA, the storage can be extended via the MicroSD card slot. With the additional digital I/Os, the smart cameras can be adapted to specific applications easily and individually.

Furthermore, different assembly and OEM options like PoE (Power over Ethernet), landscape or portrait oriented sensor heads, processor controlled lighting, IP65 and plastic foil keyboard are available options.

Accessories with system.

- Cables and I/O cables
 - with different lengths
 - ▶ bent
 - ▶ with lock screws
 - ▶ suitable for drag chain
- Power supply with or without I/O cable

- Lens holders
 - ▶ C-mount
 - ▶ CS-mount
 - ▶ S-mount
- optional: I2C support of zoom lenses

- Lenses
- Filters
- Lighting systems
- optional: LED flash rings in different colors

The click starter.

Platform-independent support of your software environment with mvIMPACT.



The comprehensive software library with standard API (mvIMPACT Acquire), tools and camera drivers. Third-party software can be integrated into the open system as well.

Hardware to check.

Flexible testing and setting options with the mv-X I/O-Box.



The box for all developers to configure the mvBlueLYNX camera in testing environments: Connecting, testing, looping into systems and mixing connection variants selectively. Let's go!



more and up-to-date infos see www.matrix-vision.de/mvbluelynx

mvBlueLYNX-X

Next generation smart camera



- OMAP™-based architecture
- Hybrid dual-core processor (ARM + DSP)
- High resolution CCD/CMOS sensors
- Resolutions from VGA to 5 Mpixels
- >100 full images/sec.
- 512 MB DDR RAM
- ≤14 bit ADC
- Up to 2/4 digital I/Os
- Integrable high-power lighting systems
- Low power consumption
- LINUX® operating system
- Programmable: C, C++; .NET (Mono)
- Vision Libs: mvIMPACT, MVTec HALCON™, OpenCV, et al.

Legal notice:

The contents of this brochure are intended to provide information only and to show possible examples. We reserve the right to change technical data and construction at any time without prior notice. The technical specifications of customer systems and of our current products have to be clarified when ordering.

Date 11/2011



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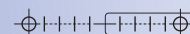
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Ideas and products Made in Germany

In the industrial image processing area, MATRIX VISION has become an important partner for customers world-wide.

Our strong-points

Aside from our extensive range of standard products we develop custom-specific solutions which provide maximum utility for the user as a result of continuous improvement.



mvBlueLYNX-X

Technical Details

Sensors



mvBlueLYNX-X		Resolution (H x V pixels)	Sensor size (optical)	Pixel size (µm)	Frame rate	Sensor technology	Readout type	ADC resolution (in memory) in bits	Sensor
-120a	G/C	640 x 480	1/3"	7.4 x 7.4	104	CCD	Global	14 (≤ 12)	Sony ICX424
-120b	G/C	640 x 480	1/3"	7.4 x 7.4	104	CCD	Global	14 (≤ 12)	Sony ICX424
-120d	G/C	750 x 580	1/2"	8.3 x 8.3	87	CCD	Global	14 (≤ 12)	Sony ICX415
-100w*	G/C	752 x 480	1/3"	6 x 6	117	CMOS	Global	10 → 12/10/8	Aptina MT9V
-122	G/C	1280 x 960	1/3"	3.75 x 3.75	31	CCD	Global	14 (≤ 12)	Sony ICX445
-102b	G/C	1280 x 960	1/3"	3.75 x 3.75	40.6	CMOS	Global	10 → 12/10/8	Aptina MT9M
-102d*	G/C	1280 x 960	1/3"	3.75 x 3.75	40.6	CMOS	Rolling	10 → 12/10/8	Aptina MT9M
-102e	G/C	1280 x 1024	1/1.8"	5.3 x 5.3	60	CMOS	Global	10 → 10/8	E2V EV76C560
-123	G/C	1360 x 1024	1/2"	4.65 x 4.65	30	CCD	Global	14 (≤ 12)	Sony ICX267
-124	G/C	1600 x 1200	1/1.8"	4.4 x 4.4	28	CCD	Global	14 (≤ 12)	Sony ICX274
-125a	G/C	2448 x 2050	2/3"	3.45 x 3.45	10	CCD	Global	14 (≤ 12)	Sony ICX655
-105	G/C	2592 x 1944	1/2.5"	2.2 x 2.2	14.4	CMOS	Global Reset	10 → 12/10/8	Aptina MT9P

* High Dynamic Range (HDR) mode supported

Hardware Features

Gray scale / Color	Gray scale (G) / Color (C)
Interface	Ethernet (100 Mbit/s), USB 2.0, USB 2.0 on-the-go, VGA, RS-232, microSD
Triggers	External hardware based, software based or free run
Size w/o lens (W x H x L) Weight w/o lens	87.5 x 55 x 37 mm approx. 195 g
Permissible ambient temperature	Operation: 0 .. 50 °C / 30 to 80 % RH Storage: -20 .. 60 °C / 20 to 90 % RH
Lens mounts	C-mount or optional CS-/S-mount; I2C support for wet lens, support for motorized zoom lens (option)
Digital I/Os	2 opto-isolated inputs / 4 high-side outputs
Conformity	CE, FCC, UL (on request), IP30 (IP65 option), RoHS
Driver	mvIMPACT Acquire SDK
Operating systems	Linux® (Ångström)
Hardware	ARM Cortex-A8 with 1GHz, DSP with 800 MHz, 512 MB DDR RAM
Supported image processing libraries	mvIMPACT SDK, EyeVision, Halcon Embedded

Dimensions (in mm)

front view	side view	back view	bottom view



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