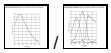
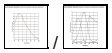
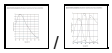
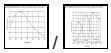
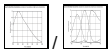
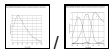
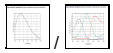
MATRIX VISION

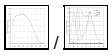
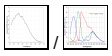
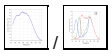
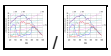
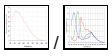
mvBlueLYNX-X

- Modular image sensor interface
- Hybrid dual core: Cortex-A8 ARM CPU up to 1 GHz plus separate real-time DSP with video interface
- 512 MByte RAM + Dual microSD card memory interface
- Wide range of interfaces
- .NET compliant Mono software interface
- Green automation: high-performance with low power consumption

The mvBlueLYNX-X is the next generation of the successful MATRIX VISION intelligent camera product line. The CPU core is based on the state-of-the-art ARM technology with up to 1 GHz target clock and image processing acceleration by DSP coprocessor for parallel handling of multiple pixels. The system is ideally suited for the classical areas of machine vision, the large processing power and high-end display and graphics capability make it perfect for many other application areas.

CCD	mvBlueLYNX						
Model name	**-X120a**	**-X120b**	**-X120d**	**-X122**	**-X123**	**-X124**	**-X125a**
Model variant	**G / C**	**G / C**	**G / C**	**G / C**	**G / C**	**G / C**	**G / C**
	G = Gray	C = Color					
Resolution of sensor's active area (width x height in [pixels])	640 x 480	640 x 480	776 x 580	1280 x 964	1360 x 1024	1600 x 1200	2448 x 2050
Maximum frame rate [Hz]	104	104	87	31	30	28	10
Shutter type	Global	Global	Global	Global	Global	Global	Global
Sensor size	1/3"	1/2"	1/2"	1/3"	1/2"	1/1.8"	2/3"
Pixel size (width x height in [µm])	7.4 x 7.4	9.9 x 9.9	8.3 x 8.3	3.75 x 3.75	4.65 x 4.65	4.4 x 4.4	3.45 x 3.45
Readout type	Progressive	Progressive	Progressive	Progressive	Progressive	Progressive	Progressive
Exposure time	10 µs - 10 s	10 µs - 10 s	10 µs - 10 s	10 µs - 10 s	20 µs - 10 s	20 µs - 10 s	20 µs - 10 s
ADC resolution (image bit depth in memory)	14 bit (≤ 12 bit)	14 bit (≤ 12 bit)	14 bit (≤ 12 bit)	14 bit (≤ 12 bit)	14 bit (≤ 12 bit)	14 bit (≤ 12 bit)	14 bit (≤ 12 bit)
Trigger (Hardware / Software)	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Pipelined global shutter in trigger mode	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Spectral sensitivity							
Sensor manufacturer	Sony	Sony	Sony	Sony	Sony	Sony	Sony
Sensor name	ICX424AL/AQ	ICX414AL/AQ	ICX415AL/AQ	ICX445ALA/AQA	ICX267AL/AK	ICX274AL/AQ	ICX655AL/AQ
Sensor technology	HAD	HAD	HAD	ExViewHAD	HAD	SuperHAD	SuperHAD

CMOS	mvBlueLYNX				
Model name	**-X100w**	**-X102b**	**-X102d**	**-X102e**	**-X105**

Model variant	**G / C**	**G / C**	**G / C**	**G / C**	**G / C**
	G = Gray	C = Color			
Resolution of sensor's active area (width x height in [pixels])	752 x 480	1280 x 960	1280 x 960	1280 x 1024	2592 x 1944
Maximum frame rate [Hz]	117	40.6	40.6	60	11.7[1]
Shutter type	Pipelined / Global	Pipelined / Global	Rolling	Pipelined / Global	Rolling / Global Reset
Sensor size	1/3"	1/3"	1/3"	1/1.8"	1/2.5"
Pixel size (width x height in [µm])	6 x 6	3.75 x 3.75	3.75 x 3.75	5.3 x 5.3	2,2 x 2,2
Exposure time	10 µs - 460 ms	10 µs - 1 s	10 µs - 1 s	10 µs - 1 s	10 µs - 10 s
ADC resolution / output	10 bit → 12, 10, 8 bit	12 bit → 12, 10, 8 bit	12 bit → 12, 10, 8 bit	10 bit (10-8 companding) → 10, 8 bit	10 bit → 12, 10, 8 bit
SNR		40 dB	> 43 dB	41 dB	> 38 dB
DR (normal / HDR)	55 dB / ≤ 110 dB	> 61 dB /	> 61 dB / ≥ 115 dB	62 dB /	> 70 dB /
Trigger (Hardware / Software)	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes	Yes / Yes
Pipelined global shutter in trigger mode	No	No	No	Yes	No
Spectral sensitivity					
Sensor manufacturer	Aptina	Aptina	Aptina	E2V	Aptina
Sensor name	MT9V034	MT9M021	MT9M034	EV76C560	MT9P031

[1] Displayable frequency might be lower depending on CPU load.

- ARM Cortex-A8. up to 1 GHz (OMAP™ 37 series)
- DSP up to 800 MHz C64x:
  L1: 32 KB D + 32 KB I L2: 256 KB
- SIMD:
  NEON, 8 x 8 bit, VFPv3
- Memory:
  DDR RAM 512 MB
  FLASH internal microSD. externally accessible microSD
- Connectors:
  100 Mbit Ethernet LAN
  2x Hirose 12-pin #1 (male): RS-232. power supply. digital I/O
  #2 (female): VGA display (analog, resolution up to XGA), USB 2.0 host
  microSD card
  USB 2.0 on-the-go
- C-mount, optional: CS-/S-mount, I2C support for wet lens, support for motorized zoom lens (option)
- Optional flashing LED ring light in different colors
- Digital I/O:
  - 2 inputs (opto-isolated with current 3..24V ± 1V
- ADC resolution: ≤ 14 bit
- Image bit depth in memory: ≤ 12 bit
- Automatic gain control (AGC)
- Automatic exposure control (AEC)
- Power consumption < 5 W
- Industrial power supply 12..24 VDC
- Permissible ambient temperature:
  - operation 0 to 50 °C / 30 to 80 %RH
- Weight without lens: approx. 195 g
- Size without lens (w x h x l): 87.5 x 55 x 37 mm

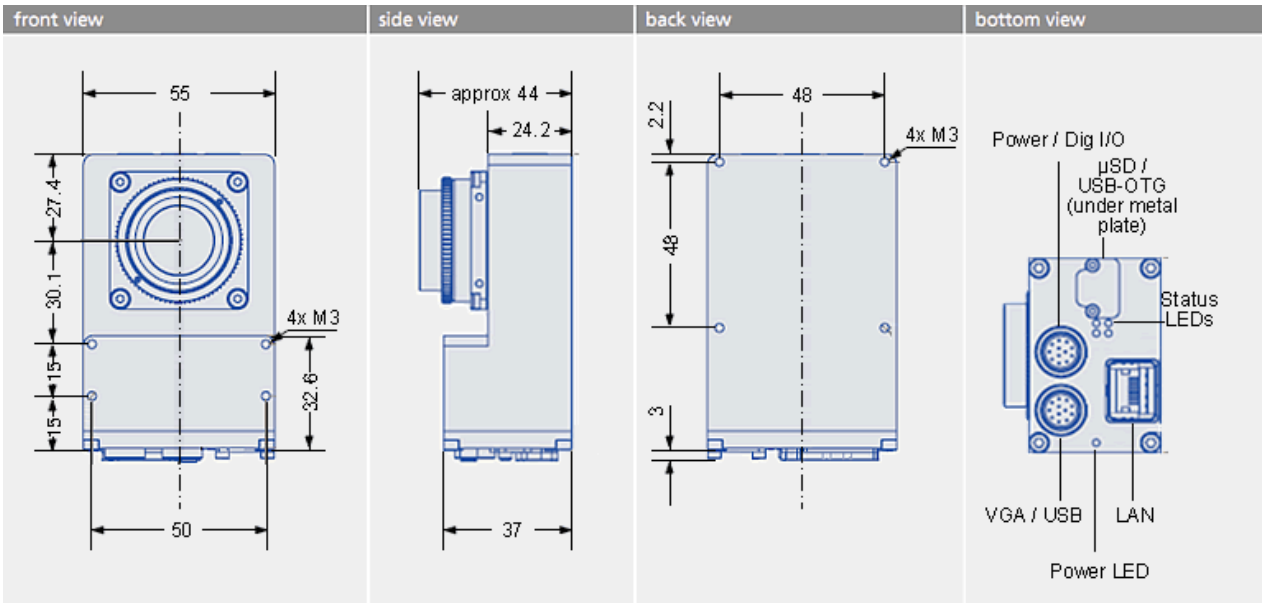
limiters)

- 4 outputs (high-side)	up to 24V and 700 mA direct drive output for high power flash or relays or actuators

- IP65 as an option
- Conformity: Immunity: EN 61000-6-2:2005; Emission: EN 61000-6-3:2007, FCC class B; RoHs; CE
- Operating system: Linux®
- Interfaces: Mono for .NET applications, web server for remote control and MMI
- Applications: OCR, Barcode, DataMatrix, etc.
- SDK for own algorithms and applications on request
- TI library for DSP preprocessing available
- Supports HALCON Embedded and EyeVision

Part code	Article description
KS-BLX-VGA-USB 01.0	USB 2.0 cable and VGA cable for mvBlueLYNX-X, Hirose 12pin to USB2-A and VGA, length 1m
KS-BLX-VGA-USB 05.0	USB 2.0 cable and VGA cable for mvBlueLYNX-X, Hirose 12pin to USB2-A and VGA, length 5m
KS-GIGE LS SLK xx.0	GigE cable CAT6 with horizontal screw locking 20mm, M2x0.4, drag chain capable, up to 20 m
KS-GIGE LS SLK AK90L 03.0	GigE cable CAT6 with horizontal screw locking 20mm, M2x0.4, drag chain capable, camera plug 90° angled left direction, 3 m
KS-GIGE LS SLK AK90R 03.0	GigE cable CAT6 with horizontal screw locking 20mm, M2x0.4, drag chain capable, camera plug 90° angled right direction, 3 m
MV-DC1201 BLX IO	Power supply 12V for mvBlueLYNX-X with digital I/O on separate cable, length: power 3 m, I/O: 0.5 m
MV-X I/O-BOX	O-Box to connect and test a mvBlueLYNX-X camera, for digital I/O and RS-232
MICRO SD CARD 8GB	External MicroSD memory card with 8 GB
Lighting systems	tbd

- Machine vision
- Surveillance
- Security
- Life science
- Medical application
- Automation



Dimensional drawing mvBlueLYNX-X

Subject to change without notice, Date 01/2013