EyeCheck
Smart Cameras

EyeCheck 9xx & 1xxx series

Technical data

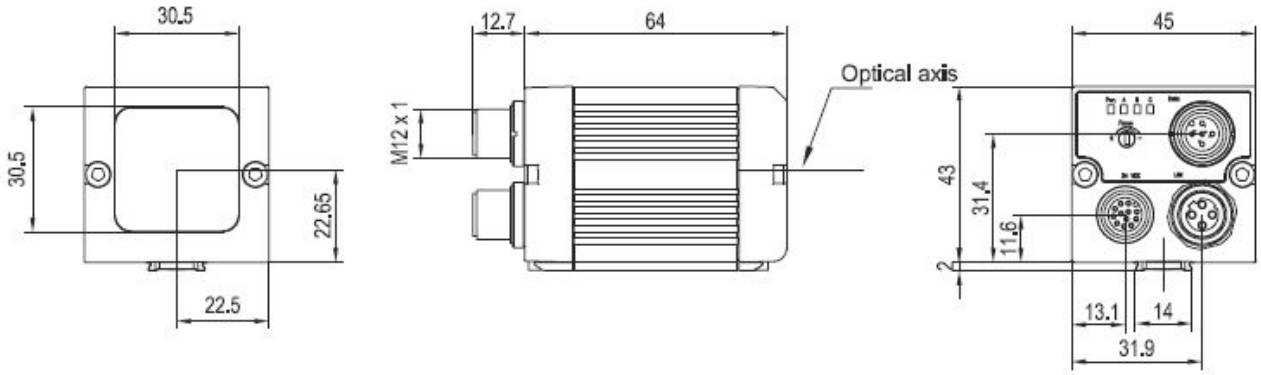
Memory:	
DDR RAM	128 MB
FLASH	128 MB
Interfaces:	Ethernet (LAN)
	RS422, RS232 (not EC900, EC910, EC1000, EC1010)
	EtherNet / IP
	PROFINET
Digital I/Os	2 In- / 4 Outputs, 4 wählbare In- / Outputs
Protection Class	IP 65 bis IP 67
Current consumption (without light & IO)	≤ 120 mA
Current consumption (ohne IO)	≤ 200 mA
Power supply	18 ... 26.4 VDC
Ambient temperature:	Operating: 0 … +50 °C (at 80% air humidity)
	Storage: - 20 … + 60 °C (at 80% air humidity)
Weight	approx. 160 g
Dimensions without lens (W x H x L)	65 x 45 x 45 mm (without connector)

EyeCheck 9xx

Model	Resolution	Sensor	Focal length	Integrated illumination	Processor
EC900	640 x 480	1/3" CMOS	6, 12, 25 mm	LED: white, red or infrared	600 MHz
EC901	640 x 480	1/3" CMOS	C-Mount	none	600 MHz
EC910	736 x 480	1/3" CMOS	6, 12, 25 mm	LED: white, red or infrared	600 MHz
EC911	736 x 480	1/3" CMOS	C-Mount	none	600 MHz

EyeCheck 1xxx

Model	Resolution	Sensor	Focal length	Integrated illumination	Processor
EC1000	640 x 480	1/3" CMOS	6, 12, 25 mm	LED: white, red or infrared	1 GHz
EC1001	640 x 480	1/3" CMOS	C-Mount	none	1 GHz
EC1010	736 x 480	1/3" CMOS	6, 12, 25 mm	LED: white, red or infrared	1 GHz
EC1011	736 x 480	1/3" CMOS	C-Mount	none	1 GHz
EC1100	768 x 582	1/1,8" CMOS	12 mm	LED: white, red or infrared	1 GHz
EC1101	768 x 582	1/1,8" CMOS	C-Mount	none	1 GHz
EC1200	1024 x 768	1/1,8" CMOS	12 mm	LED: white, red or infrared	1 GHz
EC1201	1024 x 768	1/1,8" CMOS	C-Mount	none	1 GHz
EC1300	1280 x 1024	1/1,8" CMOS	12 mm	LED: white, red or infrared	1 GHz
EC1301	1280 x 1024	1/1,8" CMOS	C-Mount	none	1 GHz



EyeCheck 9xx & 1xxx

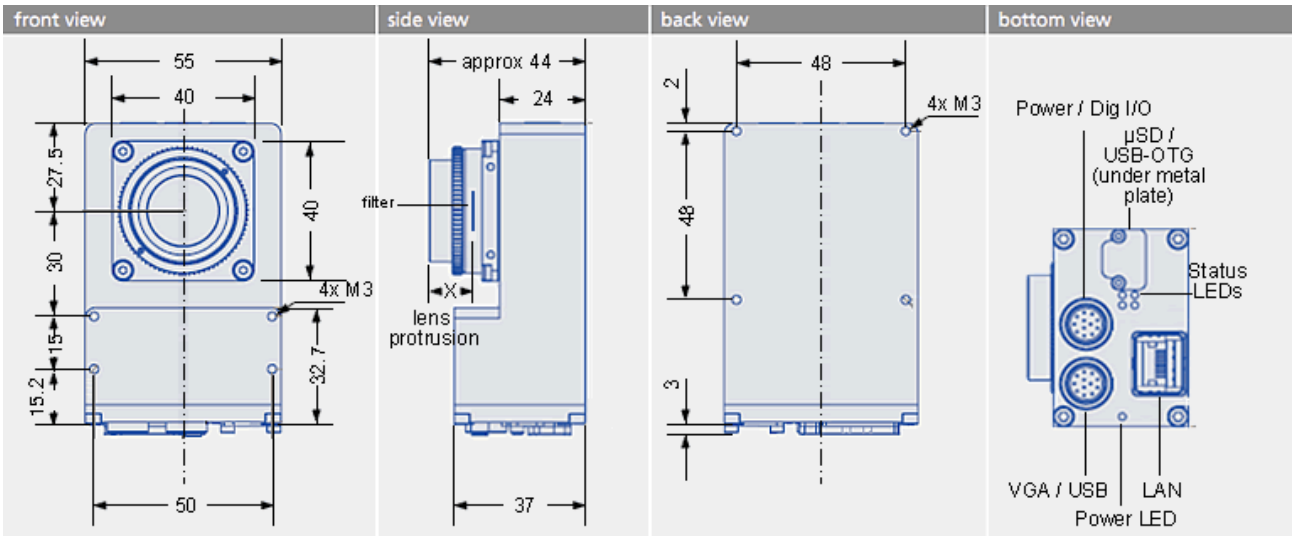
EyeCheck 2xxx & 3xxx series

Technical Data

CPU	ARM Cortex-A8, up to 1GHz (OMAP 37 series)
DSP	up to 800 MHz C64x
Memory:	
DDR RAM	512 MB
FLASH	Intern microSD, external accessible microSD
Connection:	100 MBit
	Ethernet LAN
2x Hirose 12-Pin:	#1 (male connector): RS-232 power supply
	#2 (female connector): VGA Display. USB 2.0 Host
Digital I/Os	2 Inputs / 4 Outputs
Protection class	IP65 as option
Power consumption	< 5 W
Power supply	12..24 VDC
Ambient temperature:	Operating: 0 to 50 °C
	Storage: -20 to 60 °C
Weight without lens	approx. 195 g
Dimensions without lens (W x H x L)	87,5 x 55 x 37 mm

Model CMOS	Resolution / Sensor	Frame Rate
EC2000	640 x 480 · 1/3"	60 fps
EC2050	752 x 480 · 1/3"	60 fps
EC2200	1280 x 960 · 1/3"	40 fps
EC2210	1280 x 960 · 1/3"	25 fps
EC2300	1280 x 1024 · 1/3"	60 fps
EC2600	2592 x 1944 · 1/3"	5,8 fps

Model CCD	Resolution / Sensor	Frame Rate
EC3000	640 x 480 · 1/3"	90 fps
EC3010	640 x 480 · 1/2"	104 fps
EC3050	750 x 580 · 1/2"	87 fps
EC3200	1280 x 964 · 1/3"	31 fps
EC3300	1360 x 1024 · 1/2"	30 fps
EC3400	1600 x 1200 · 1/1,8"	28 fps
EC3600	2448 x 2050 · 2/3"	10 fps



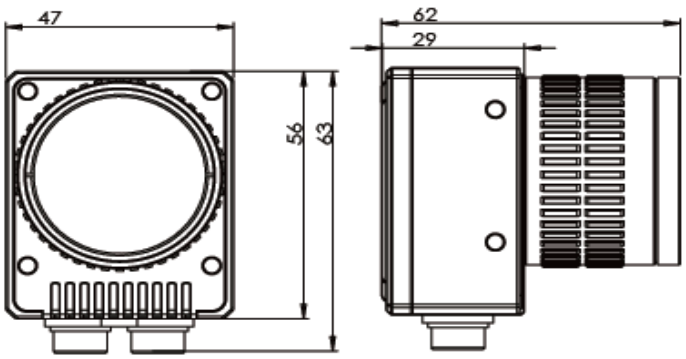
EyeCheck 2xxx & 3xxx

EyeCheck 4xxx series with free programmable FPGA

Technical data

CPU	800MHz / 1GHz Dual Core ARM CORTEX A9
Operating System	Linux
Memory:	
DDR3	512 MB, 1 GB
FLASH	4 GB, 8 GB, 16 GB
Connections:	
	Ethernet 10/100 MBit – 1 GB
	CAN / RS485
Digital I/Os	10 programmierbare I/O
Protection class	IP65
Power consumption	4 W
Power supply	9~ 30 VDC
Material	Metall
Mount	C-Mount, S-Mount
Weight without lens	approx. 120 g
Dimensions without lens (W x H x L)	64 x 47 x 29 mm

Model	Resolution	Sensor	Frame Rate	Mono / Color
EC4000	640 x 480	1/3" CMOS	60	Mono
EC4000C	640 x 480	1/3" CMOS	60	Color
EC4050	752 x 480	1/3" CMOS	60	Mono
EC4050C	752 x 480	1/3" CMOS	60	Color
EC4200	1280 x 960	1/3" CMOS	60	Mono
EC4200C	1280 x 960	1/3" CMOS	60	Color
EC4600	2592 x 1944	2/3" CMOS	30	Mono
EC4600C	2592 x 1944	2/3" CMOS	30	Color
EC4600L	4096 x 1	2/3" CMOS	10000	



EyeCheck 4xxx

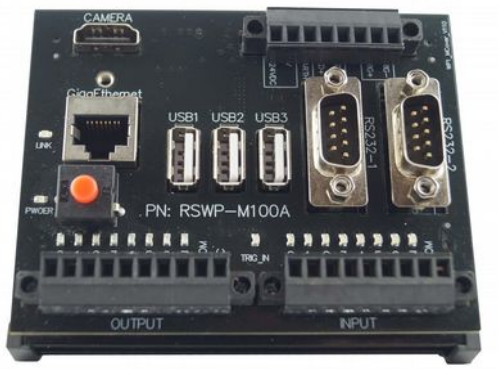
EyeCheck 5xxx series

Technical Data

CPU	X86 1 GHz, VIA EdenULV (L1 Caches 64 KB x2, L2 Caches 128 KB)
Memory	512 MB DDR2 SDRAM
Operating System	Windows
Ethernet	1000 Base-T/A00 Base-TX/10 Base-T
USB	Hi-Speed USB (USB 2.0) (2x)
Serial Interfaces	RS-2322C
Monitor Output	D-Sub 15-polig for Multi-Scan-Monitor
Digital I/Os	Isolated 4 Inputs / 8 Outputs
Aperture control	DC
Power consumption	Max. 17,4 W
Operating voltage	+12 V and +24 V
Lens Mount	C-Mount and CS-Mount
Ambient temperature:	Operating: -5 to 45 °C
	Storage: -30 to 60 °C
Air humidity:	Operating: 20 to 80 % (no condensation)
	Storage: 20 to 95 % (no condensation)
Weight without lens	approx. 760 g
Dimensions without lens (W x H x L)	94 x 70 x 140 mm

Model	Resolution	Sensor	Frame Rate	Processpr
EC5000	720 x 540	1/3" CCD Mono	200 fps	1.91 GHz
EC5300	1280 x 1024	1/2" CMOS Mono	90 fps	1.91 GHz
EC5310	1456 x 1088	1/3" CMOS Mono	107 fps	1.91 GHz
EC5400	1616 x 1232	1/1.8" CCD Mono	30 fps	1.91 GHz
EC5500	2064 x 1536	1/1.8" CMOS Mono	55.6 fps	1.91 GHz
EC5600	2448 x 2048	2/3" CCD Mono	15 fps	1.91 GHz
EC5610	2456 x 2048	2/3" CMOS Mono	35.7 fps	1.91 GHz
EC5700	3072 x 2048	1/1.8" CMOS Mono	30 fps	1.91 GHz
EC5900C	5472 x 3648	1" CMOS Mono	15 fps	1.91 GHz

* All EyeCheck 5xxx also available as Color cameras.


CAMERA
GigaEthernet
LINK
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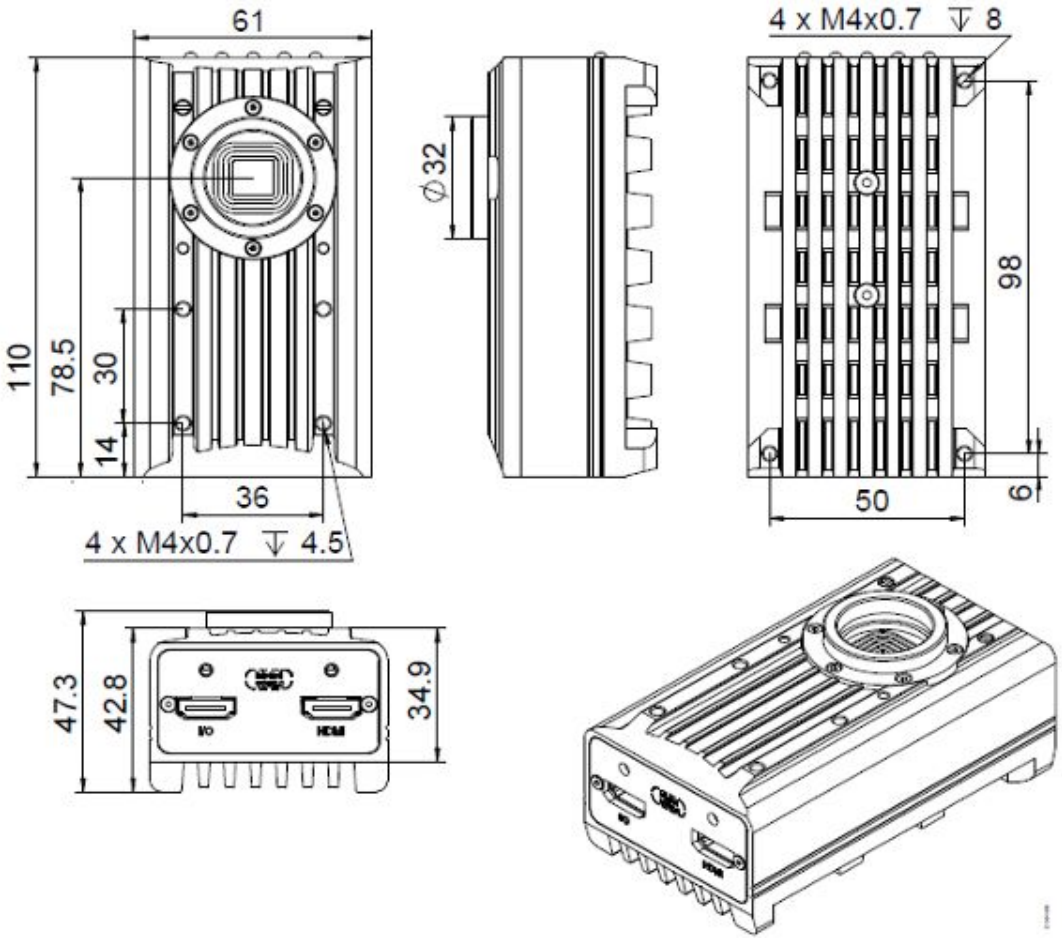
USB1
USB2
USB3
RS232-1
RS232-2
PN: RSWP-M100A
TRIG_IN
OUTPUT
INPUT


61
110
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4 x M4x0.7 ↧ 4.5
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98
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6
47.3
42.8
34.9
I/O
HDMI

EyeCheck 6xxx series

Technical data

Processor	Intel Atom E3845, Quad Core @ 1,91 GHz
Display	VGA connector, max. 2560 x 1600 @ 60 Hz
Memory:	RAM: 2 GB DDR3L
	16 to 32 GB SSD
Advanced Processing	ROI, LUT, Shading Correction
Sensor Format	Monochrom
Trigger Input	1 x Opto-isoliert Trigger Input
Digital I/Os	4 Input / 4 Output
Ethernet	1 x Gigabit Ethernet
Serial Interfaces	1 x RS232 (only TX and RX)
USB	1 x USB 2.0
Operating System	Windows 7, Windows Embedded Standard 7
Lens Mount	C-Mount
Protection Class	IP67
Power consumption	13 W
Power supply	12..24 VDC +/- 10%
Ambient temperature:	Operating: 0 bis 50 °C
Plug connection	1 x M12 8-pin (Female), 1 x M12 17-pin (Male), 1 x 12-pin (Male)
Weight	approx. 195 g
Dimensions (W x H x L)	68,5 x 110 x 52,7 mm

Model	Resolution	Sensor	Frame Rate	SSD	Megapixel
EC6040-32	2048 x 2048	1" CMOS	60 fps	32 G	4 MP
EC6040-16	2048 x 2048	1" CMOS	60 fps	16 G	4 MP
EC6020-32	2048 x 1088	2/3" CMOS	120 fps	32 G	2 MP
EC6020-16	2048 x 1088	2/3" CMOS	120 fps	16 G	2 MP

EyeCheck 6xxx

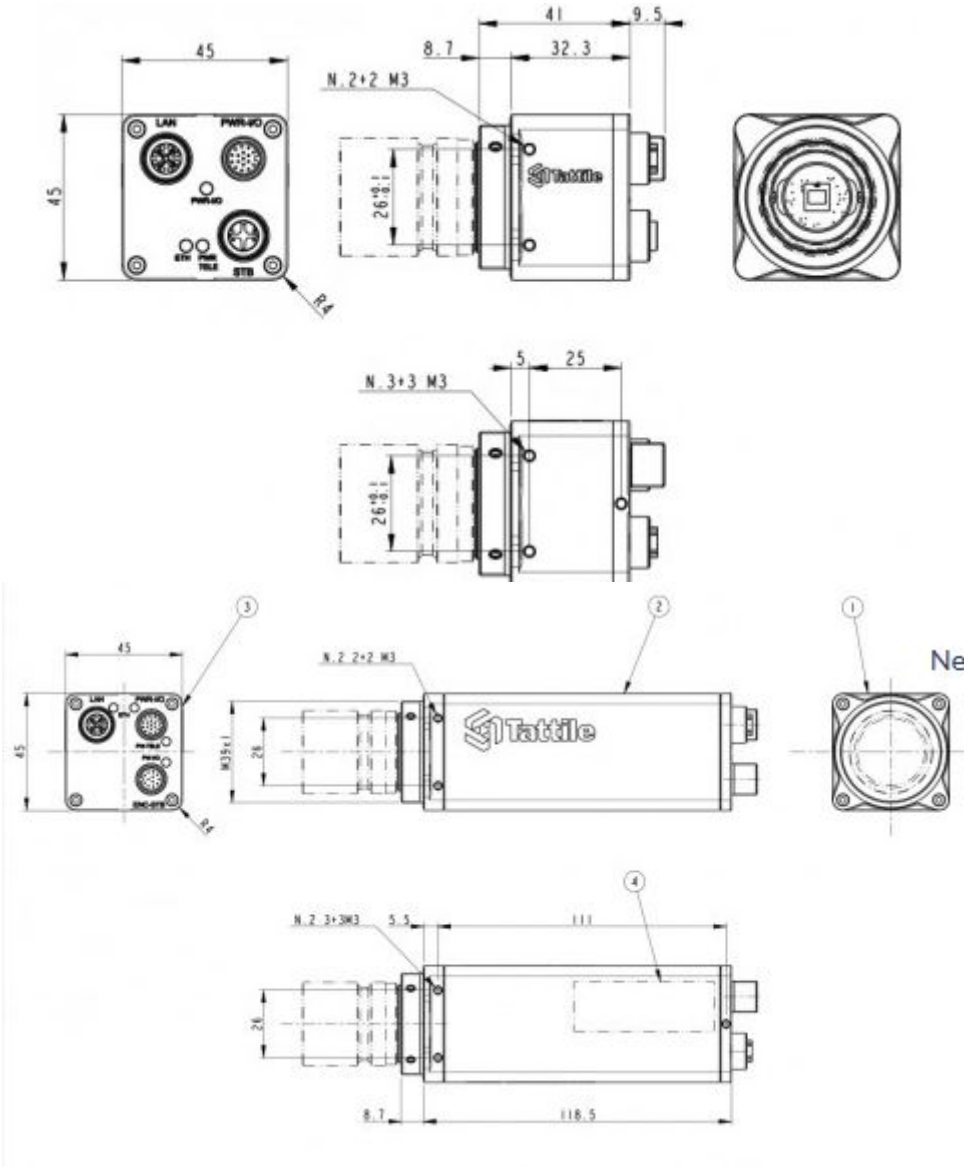
EyeCheck 7xxx series

Technical Data

CPU	Single / Dual Core Cortex-A9 800 MHz
Memory:	
System RAM	512 MB
FLASH	Secure Digital 8 GB (up to 32 GB)
FPGA	XILINX 28K Logical Elements / XILINX Artix-7 28K LEs
FPGA RAM	1 GB (only for model EC7800)
FPGA – CPU Schnittstellen	High Speed Amba bus internal chip
Digital I/Os	2 Inputs / 2 Outputs PNP
Strobe Outputs	2
Encoder Input	3 channels RS422 Line Driver (only for model EC7800)
LAN	Gigabit Ethernet
Serial Interfaces	RS232, RS485
Protection Class	IP67
Lens	C-Mount
Power supply	24 VDC
Operating System	Linux

Model	Resolution	Sensor Type	Sensor Model	Frame Rate
EC7100	640 x 480	1/3" CMOS	-	120 fps
EC7110	640 x 480	1/3" CMOS	CMV300	250 fps
EC7600	2048 x 1024	2/3" CMOS	CMV2000	70 fps
EC7700	2048 x 2048	1" CMOS	CMV4000	35 fps
EC7800	2048 x 2048	1" CMOS	CMV4000	180 fps

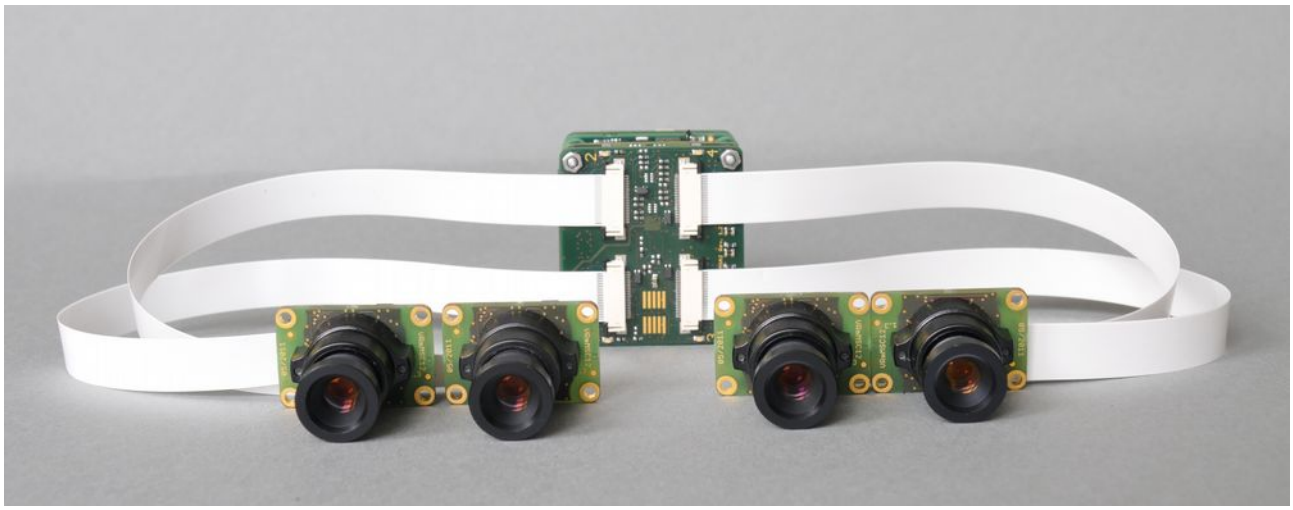
EyeCheck 7xxx



EyeCheck 8xxx series

Technical Data

Operating System	Linux (Debian)
CPU	ARM Cortex-A8, 1GHz
DSP	700 MHz C674x
RAM	2 GB DDR3-800
FLASH Memory	16 GB
SD Card	yes
Ethernet	1 Gbit/s
USB Host / Device	yes / yes
GPIOs	bis zu 44
RS232 / RS485	yes / yes
SATA	yes
CAN Bus	yes
JTAG	yes
Real-time Clock (RTC)	yes
Maximum Video Resolution	1080p
S-Video	yes
RGB888	yes
HDMI	yes
Audio in/out	yes
Wake on LAN	yes



EyeCheck 9xxx series

The EyeCheck 9xxx 15 & 30 smart camera series contains:

- 8 In- and 8 Outputs	- 2 x Micro-USB
- interfaces GigE & RS232 (optionally USB 2.0)	- mini-PCI Express
- additional LVDS interface	- freely programmable FPGA
- M12 connectors with IP65	- EyeVision image processing software

EyeCheck 9xxx 15 & EyeCheck 9xxx 30 ZYNQ board all programmable SoC

	Z-7015 (EC9xxx-15)	**Z-7030 (EC9xxx-30)**
Programmable Logic Cells	74K Logic Cells	125K Logic Cells
Look-Up Tables (LUTs)	46,200	78,600
Flip-Flops	92,400	157,200
Extensible Block RAM	380 KB	1,060 KB

Raze1-15 & Raze1-30 ZYNQ board features

	Z-7015	**Z-7030**
Processor Core	Dual ARM Cortex A9 MPCore with CoreSight	
Processor Extensions	NEON & Single / Double Precision Floating Point for each processor	
Maximum Frequency	667 MHz (-1) – 766 MHz (-2)	667 MHz (-1) – 800 MHz (-2)
L1 Cache	32 KB Instruction, 32 KB Data per processor	
L2 Cache	512 KB	
On-Chip Memory	256 KB	
External Static Memory Support	Quad-SPI, NAND	
DMA Channels	8 (4 dedicated to Programmable Logic)	
Peripherals	2x UART, 2x CAN 2.0B, 2x I2C, 2x SPI, 4x 32b GPIO	
Peripherals w/ built-in DMA	2x USB 2.0, Tri-mode Gigabit Ethernet, SD/SDIO	

Model	Resolution	Sensor	FPS	Sensor Type	Processor
EC9000-30	640 x 480	1/3" CMOS	up to 60 fps	Global Shutter	DualCore/ 866 MHz
EC9200-30	1024 x 768	1/3" CMOS	up to 60 fps	Rolling Shutter	DualCore/ 866 MHz
EC9300-30	1280 x 1024	1/3" CMOS	up to 60 fps	Rolling Shutter	DualCore/ 866 MHz
EC9600-30	2592 x 1944	1/3" CMOS	up to 60 fps	Rolling Shutter	DualCore/ 866 MHz
EC9000-15	640 x 480	1/3" CMOS	up to 60 fps	Global Shutter	DualCore/ 866 MHz
EC9200-15	1024 x 768	1/3" CMOS	up to 60 fps	Rolling Shutter	DualCore/ 866 MHz
EC9300-15	1280 x 1024	1/3" CMOS	up to 60 fps	Rolling Shutter	DualCore/ 866 MHz
EC9600-15	2592 x 1944	1/3" CMOS	up to 60 fps	Rolling Shutter	DualCore/ 866 MHz

* All models also available with color sensor.

EyeCheck 9xxx Line Scan series

The EyeCheck 9xxx 15 & 30 smart camera series contains:

- 8 In- and 8 Outputs	- 2 x Micro-USB
- interfaces GigE & RS232 (optionally USB 2.0)	- mini-PCI Express
- additional LVDS interface	- freely programmable FPGA
- M12 connectors with IP65	- EyeVision image processing software

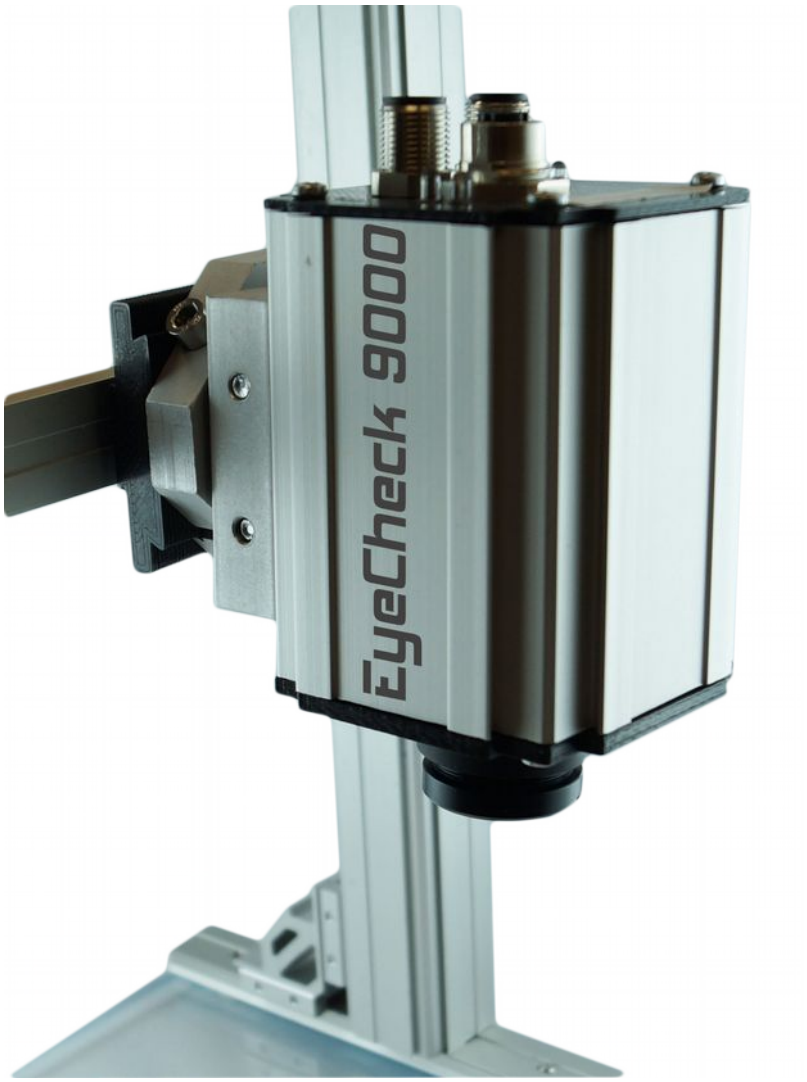
EyeCheck 9xxx 15 & EyeCheck 9xxx 30 ZYNQ board all programmable SoC

	Z-7015 (EC9xxx-15)	**Z-7030 (EC9xxx-30)**
Programmable Logic Cells	74K Logic Cells	125K Logic Cells
Look-Up Tables (LUTs)	46,200	78,600
Flip-Flops	92,400	157,200
Extensible Block RAM	380 KB	1,060 KB

Raze1-15 & Raze1-30 ZYNQ board features

	Z-7015	**Z-7030**
Processor Core	Dual ARM Cortex A9 MPCore with CoreSight	
Processor Extensions	NEON & Single / Double Precision Floating Point for each processor	
Maximum Frequency	667 MHz (-1) – 766 MHz (-2)	667 MHz (-1) – 800 MHz (-2)
L1 Cache	32 KB Instruction, 32 KB Data per processor	
L2 Cache	512 KB	
On-Chip Memory	256 KB	
External Static Memory Support	Quad-SPI, NAND	
DMA Channels	8 (4 dedicated to Programmable Logic)	
Peripherals	2x UART, 2x CAN 2.0B, 2x I2C, 2x SPI, 4x 32b GPIO	
Peripherals w/ built-in DMA	2x USB 2.0, Tri-mode Gigabit Ethernet, SD/SDIO	

Model	Resolution	FPS	Sensor Type
EC9900-30	1 x 512	up to 5 kHz	Global Shutter
EC9910-30	1 x 1024	up to 5 kHz	Global Shutter
EC9920-30	1 x 2048	up to 5 kHz	Global Shutter
EC9900-15	1 x 512	up to 5 kHz	Global Shutter
EC9910-15	1 x 1024	up to 5 kHz	Global Shutter
EC9920-15	1 x 2048	up to 5 kHz	Global Shutter



EyeCheck 9xxx

EyeCheck ZQ

Processor Type	ARM Cortex-A9, 866MHz Duo-Core CPUs
Memory / Storage	512 MB DDR3 RAM & 4GB Flash
Ethernet Port	10/100M
Communication Port	TCP / UDP
Programmable isolated I/Os	2IN / 2OUT
Lighting Control	Embedded Lighting
Power Supply	9 to 30VDC, 1.5W
Operation Condition	-20 to +55°C
Dimension	20 x 20 x 60 mm
Weight	50g

Model	Resolution	FPS	Sensor Type
EyeCheck ZQ-03MP	640 x 480	90 fps	1/3" CMOS
EyeCheck ZQ-13MP	1280 x 960	45 fps	1/3" CMOS

Hikvision Smart Camera Support

Processor Type	Intel x86, Intel E3845, Quad-core processor, 1.9 GHz
Memory / Storage	4GB DDR3 Memory/ 32GB SSD
Ethernet Port	
Communication Port	
Programmable isolated I/Os	12 pin IO interface, general purpose input ×3, general purpose output ×3, RS232 serial port input ×1, RS232 serial port output ×1
Lighting Control	MV-SI622-01GM contains LED light source, lens cover and external light source interface
Power Supply	Approx. 34.0W@24VDC
Operation Condition	
Dimension	126mm×66mm×113.2mm
Weight	Approx. 750g

Model	Resolution	FPS	Sensor Type
MV-SI622-01GM	2592×2048	30fps	5MP, 1" CMOS, x86 Industrial Smart Camera

EyeCheck ZLS & ZM

Technische Daten

Betriebssystem	Linux
Prozessor	Dual Core 800 MHz oder 1.5 GHz, optional Myriad 2
Schnittstelle	GigE (PoE)
Schnittstellen Option	UART, SPI, I²C
Digital I/Os	4/4 galvanisch getrennt 24V
	3 frei programmierbare 24V tolerant
SDK	C++ zum Empfangen der Bilddaten & zur Parametrierung
Bibliotheken	OpenCV, EVLib, etc.
Option	als Netzwerkkamera zur Bildübertragung
	als RazerCam ohne EyeVision Software

EyeCheck Kameratypen

EyeCheck ZLS		
EyeCheck	**Auflösung**	**Prozessor**
EC 1100 ZLS	2048 Pixel	DualCore 800 MHz
EC 1101 ZLS	2048 Pixel	DualCore 800 MHz & Myriad 2 Deep Learning Prozessor
EC 1200 ZLS	4096 Pixel	DualCore 800 MHz
EC 1201 ZLS	4096 Pixel	DualCore 800 MHz & Myriad 2 Deep Learning Prozessor
EC 1300 ZLS	2x2048 Pixel	DualCore 800 MHz
EC 1301 ZLS	2x2048 Pixel	DualCore 800 MHz & Myriad 2 Deep Learning Prozessor
EC 2100 ZLS	2048 Pixel	DualCore 1.5 GHz
EC 2101 ZLS	2048 Pixel	DualCore 1.5 GHz & Myriad 2 Deep Learning Prozessor
EC 2200 ZLS	4096 Pixel	DualCore 1.5 GHz
EC 2201 ZLS	4096 Pixel	DualCore 1.5 GHz & Myriad 2 Deep Learning Prozessor
EC 2300 ZLS	2x2048 Pixel	DualCore 1.5 GHz
EC 2301 ZLS	2x2048 Pixel	DualCore 1.5 GHz & Myriad 2 Deep Learning Prozessor
EyeCheck ZM		
EyeCheck	**Auflösung**	**Prozessor**
EC 1100 ZM	1.6 Megapixel	DualCore 800 MHz
EC 1101 ZM	1.6 Megapixel	DualCore 800 MHz & Myriad 2 Deep Learning Prozessor
EC 1200 ZM	3.2 Megapixel	DualCore 800 MHz
EC 1201 ZM	3.2 Megapixel	DualCore 800 MHz & Myriad 2 Deep Learning Prozessor
EC 1300 ZM	5.1 Megapixel	DualCore 800 MHz
EC 1301 ZM	5.1 Megapixel	DualCore 800 MHz & Myriad 2 Deep Learning Prozessor
EC 2100 ZM	1.6 Megapixel	DualCore 1.5 GHz
EC 2101 ZM	1.6 Megapixel	DualCore 1.5 GHz & Myriad 2 Deep Learning Prozessor
EC 2200 ZM	3.2 Megapixel	DualCore 1.5 GHz
EC 2201 ZM	3.2 Megapixel	DualCore 1.5 GHz & Myriad 2 Deep Learning Prozessor
EC 2300 ZM	5.1 Megapixel	DualCore 1.5 GHz
EC 2301 ZM	5.1 Megapixel	DualCore 1.5 GHz & Myriad 2 Deep Learning Prozessor

Alle Kameratypen auch als Farbkamera erhältlich.