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BigEye Series M42 mount USB3.0 CMOS Camera

Large scientific CMOS sensor (SONY or GSENSE Back-illuminated CMOS sensor);

Wide spectrum range, some models even have high response from ultra-violet to infrared wavelength;

Real-time 8/12bit depth switch(depending on sensor);

Ultra-fine HISP VP and USB3.0 5 Gbps interface ensuring high frame rates(Up to 30 frames for 10M resolution);

Ultra low noise and low power dissipation by using column-parallel A/D conversion;

With hardware resolution from 4.2M to 10.3M;

Rolling Shutter or Global Shutter;

Standard M42 mount and M42 to C-mount or F-mount;

CNC aluminum alloy housing;

With advanced video & image processing application ToupView;

Windows/Linux/macOS/Android multiple platform SDK;



Specification

BigEye Series M42 and M42 to C or F Mount USB3.0 CMOS Camera(7)

BigEye adopt SONY Exmor or GSENSE CMOS sensor as the image-picking device and USB3.0 is used as the transfer interface. BigEye hardware resolutions range from 4.2M to 10M and come with the integrated CNC aluminum alloy compact housing.

BigEye integrated with 12~16 bit Ultra-fine Hardware Image Signal Processor Video Pipeline(Ultra-fineTM HISPVP) for Demosaic, Adjustments, Automatic Exposure, Gain Adjustment, One Push White Balance, Chrominance Adjustment, Saturation Adjustment, Gamma Correction, Luminance Adjustment, Contrast Adjustment, Bayer and finally form RAW data for 8/12 bit output. This will move the heavier burden of the processing from the PC to the Ultra-fineTM HISPVP and greatly accelerating the processing speed.

BigEye comes with advanced video & image processing application ToupView; Providing Windows/Linux/macOS/Android multiple platform SDK(Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc);

The BigEye can be widely used in bright field light environment and microscope image capture and analysis with higher frame rate.

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity	FPS/Resolution	Binning	Exposure
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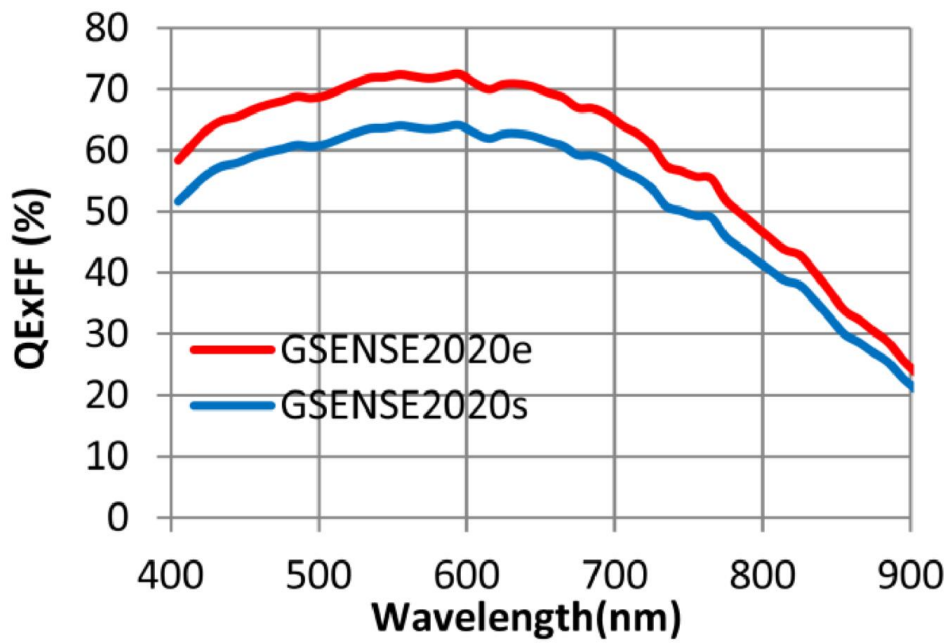
			Dark Signal			
BigEye10000KPA BP910000A	10.3M/IMX294(C) 4/3 “(17.47x12.86)	4.63 x4.63	419mv with 1/30s 0.12mv with 1/30ss	30@3704x2778 34.5@4096x2160 39.5@2760x2072 62@2048x1080 86@1360x720	1x1 1x1 1x1 2x2 3x3	0.1ms~15s
BigEye4200KMA BM94200A(New)	4.2M/GSENSE2020e(M,RS) 1.2”(13.31x13.31)	6.5x6.5	8.1×10^7 (e-/((W/m ²).s)) Peak QE 64.2% @550nm 13(e-/s/pix)	45@2048x2048 45@1024x1022	1x1 2x2	0.01ms~60s
BigEye4200KMB BM94200B(New)	4.2M/GSENSE2020BSI(M,RS) 1.2”(13.31x13.31)	6.5x6.5	1.1×10^8 (e-/((W/m ²).s)) Peak QE 93.7% @550nm 80(e-/s/pix)	22@2048x2048 22@1024x1024	1x1 2x2	0.01ms~60s
BigEye4200KMC BM94200C(New)	4.2M/GSENSE2020BSI(M,RS) 1.2”(13.31x13.31)	6.5x6.5	1.1×10^8 (e-/((W/m ²).s)) Peak QE 93.7% @550nm 80(e-/s/pix)	44@2048x2048(12bit) 44@1024x1024(12bit) 44@680x680(12bit) 44@512x512(12bit)	1x1 2x2	0.01ms~60s
BigEye4200KMD BM94200D(New)	4.2M/GSENSE2020BSI(M,RS) 1.2”(13.31x13.31)	6.5x6.5	1.1×10^7 (e-/((W/m ²).s)) Peak QE 93.7% @550nm 80(e-/s/pix)	44@2048x2048(16bit) 44@1024x1024 (16bit)	1x1 2x2	0.01ms~60s
MIPI4200KMB BM94201B(New)	4.2M/GSENSE2020BSI(M,RS) 1.2”(13.31x13.31)	6.5x6.5	1.1×10^7 (e-/((W/m ²).s)) Peak QE 93.7% @550nm 80(e-/s/pix)	22@2048x2046(12bit)	1x1 2x2	0.01ms~60s
BigEye4200KME BM94200E	4.2M/GSENSE400BSI (M, UV, RS) 2.0” (22.53x22.53)	11x11	3.25×10^8 (e-/((W/m ²).s)) Peak QE 95.3% @560nm 345(e-/s/pix)	37@2048 x2048 37@1024 x1024	1x1 2x2	0.01ms~60s

C: Color; M: Monochrome; GS: Global Shutter, UV: Good UV response

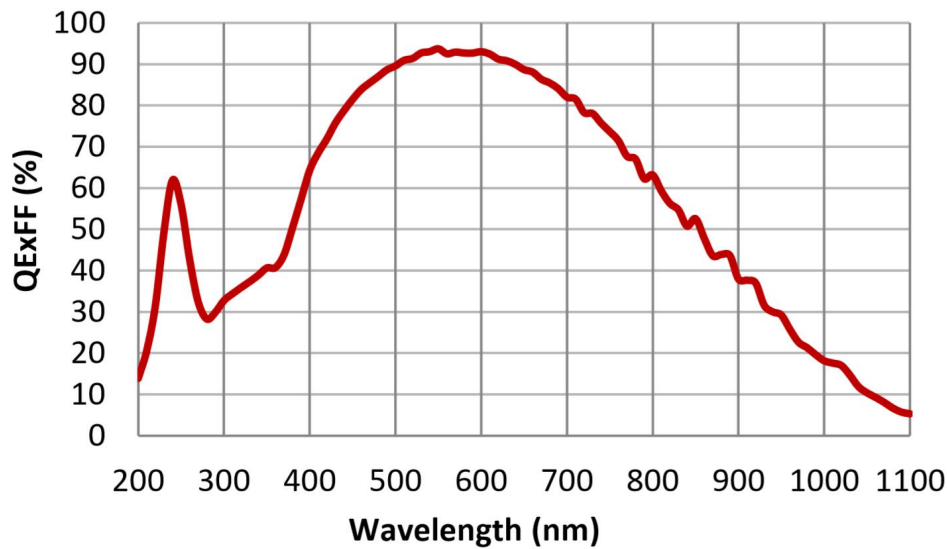
The characteristic of BigEye4200KMB, BigEye4200KMC, BigEye4200KMD and MIPI4200KMB are as follows

Order Code	Power Consumption (W)	Characteristic and Data Output Format	FPS/Resolution
BigEye4200KMB BM94200B(New)	2.5~2.9	Support 2D denoising, hardware Auto Level (Default is not supported. The power consumption is 2.9w after upgrading) , RAW12 format	22@2048x2048 22@1024x1024
BigEye4200KMC BM94200C(New)	3.0	High frame rate, RAW12 format	44@2048x2048(12bit) 44@1024x1024(12bit)
BigEye4200KMD BM94200D(New)	3.0	High frame rate and high dynamic range, Combined HDR 16bit(HG 12bit format and LG 12bitformat output, and is combined to 16bit with FPGA)	44@2048x2048(16bit) 44@1024x1024 (16bit)
MIPI4200KMB BM94201B(New)	TBD	MIPI D-PHY CSI-2 1Ch 4Lane(For HiSilicon and Road chip embedded system)	22@2048x2046(12bit)

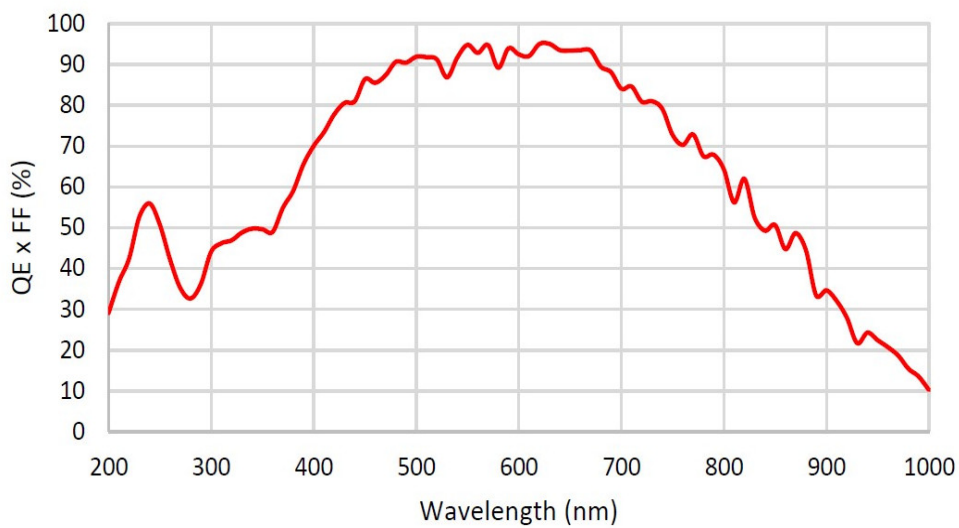
The hardware of BigEye4200KMB, BigEye4200KMC, BigEye4200KMD are the same.



Spectral response of GSENSE2020e and GSENSE2020s



Spectral Response of GSENSE2020BSI



Spectral Response of GSENSE400BSI

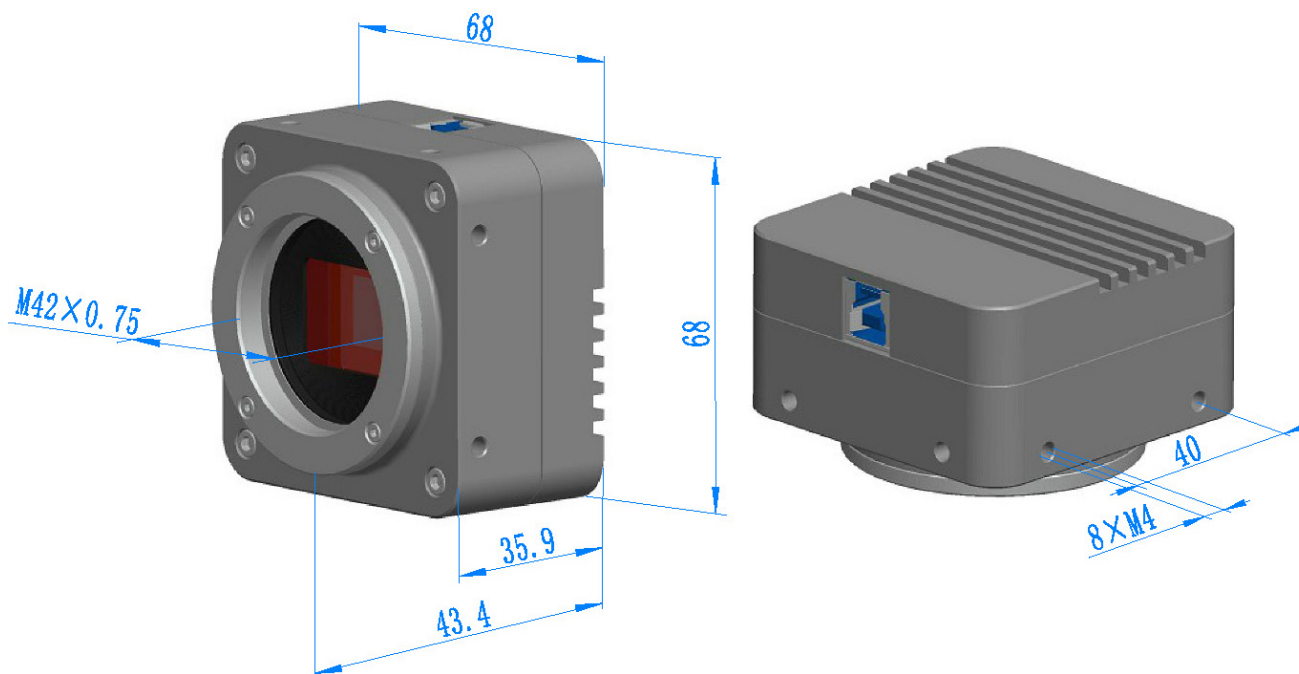
OTHER HARDWARE CONFIGURATION

Spectral Range	380-650nm (with IR-filter), for Monochromatic Camera, AR Is Used
White Balance	ROI White Balance/ Manual Temp-Tint Adjustment
Color Rendering Technique	Ultra Fine Color Engine
Capture/Control SDK	Windows/Linux/macOS/Android Multiple Platform SDK(Native C/C++, C#/VB.NET,

	Python, Java, DirectShow, Twain, etc);
Recording System	Still Picture and Movie
Cooling System*	Natural
OPERATING ENVIRONMENT	
Operating Temperature	-10 °C~ 50 °C
Storage Temperature	-20 °C~ 60 °C
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 5V over PC USB Port
SOFTWARE ENVIRONMENT	
Operating System	Support Microsoft Windows XP / Vista / 7 / 8 / 10(32 & 64 bit) OS X (Mac OS X), Linux
PC Requirements	CPU: Equal to Intel Core2 2.8GHz or Higher
	Memory: 2GB or More
	USB port: USB2.0 High-speed Port
	Display: 17" or Larger CD-ROM

Dimension of BigEye Series Camera

Installation drawings(Click to enlarge). The BigEye body, made from CNC aluminum alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. This design ensures a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions.



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