

Touptek Mikroskop - Camera BigEye USB 3.0 Data Transfer

The BigEye camera series is equipped with scientific CMOS sensors from Sony or Gsense with backlighting.

The data transfer takes place via the USB 3.0 port.

F-mount adapters for use with corresponding camera lenses, C-mount adapters or phototubes for microscopes from Olympus, Nikon, Zeiss, Leica and other microscopes can be connected via the M42x0.75 mm thread.

Like all Touptek cameras, the BigEye series is also supplied with software that enables extensive image processing, storage, 2D measurements and much more. The software runs on Windows / Linux / OSX SDK for multiple platforms; Native C / C ++, C # / VB.NET, DirectShow and Twain Control API.



Die basic characteristics of the BigEye-serie are:

- Large scientific CMOS sensor (SONY or GSENSE Back-illuminated CMOS sensor)
- Wide spectrum range, some models even have high response in the ultra-violet to infrared wavelength
- Real-time 8/12bit depth switch(depending on sensor)
- Ultra-fineTM 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
- Providing Windows/Linux/Mac OS multiple platforms SDK
- Native C/C++, C#/VB.Net, DirectShow, Twain
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Available Versions

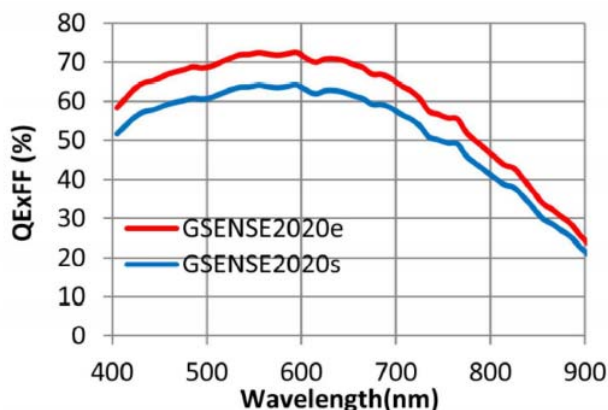
| Order Code | Sensor & Size(mm) | Pixel(μm) | G Sensitivity Dark Signal | FPS/Resolution | Binning | Exposure |
|----------------------------------|---|------------------------|---|---|-------------------------------------|------------|
| BigEye10000KPA BP910000A(New) | 10.3M/IMX294(C) 4/3“(17.47x12.86) | 4.63 x4.63 | 419mv with 1/30s 0.12mv with 1/30s | 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) | 6.5x 6.5 | 8.1x107 (e-/((W/m2).s)) Peak QE 64.2% @595nm 13(e-/s/pix) | 45@2048x2048 45@1024 x 1022 | 1x1 2x2 | 0.01ms~60s |
| BigEye4200KMB BM94200B | 4.2M/GSENSE2020BSI (M,UV, RS) 1.2”(13.31x13.31) | 6.5 x 6.5 | 1.1x108 (e-/((W/m2).s)) Peak QE 93.7% @550nm 80(e-/s/pix) | 22@2048 x2048 22@1024 x1024 | 1x1 2x2 | 0.01ms~60s |
| BigEye4200KMC BM94200C | 4.2M/GSENSE2020BSI (M,UV, RS) 1.2”(13.31x13.31) | 6.5 x 6.5 | 1.1x108 (e-/((W/m2).s)) Peak QE 93.7% @550nm 80(e-/s/pix) | 44@2048x2048(12bit) 44@1024x1024(12bit) | 1x1 2x2 | 0.01ms~60s |
| BigEye4200KMD BM94200D | 4.2M/GSENSE2020BSI (M,UV, RS) 1.2”(13.31x13.31) | 6.5 x 6.5 | 1.1x108 (e-/((W/m2).s)) Peak QE 93.7% @550nm 80(e-/s/pix) | 44@2048x2048(16bit) 44@1024x1024(16bit) | 1x1 2x2 | 0.01ms~60s |

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

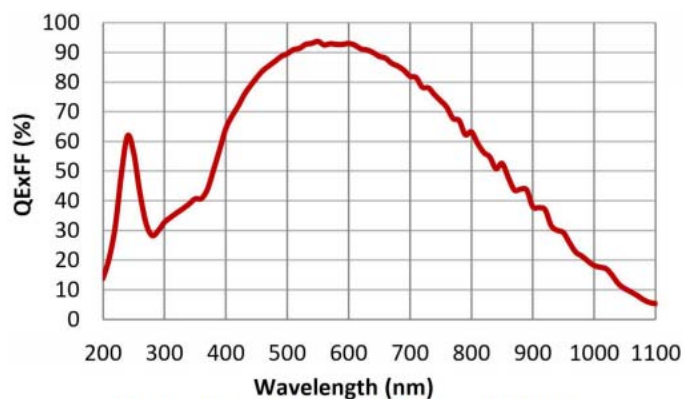
The characteristic of [BigEye4200KMB](#), [BigEye4200KMC](#), [BigEye4200KMD](#) and [MIPi4200KMB](#) are as follows

| Order Code | Power Consumption(W) | Characteristic and Data Output Format | FPS/Resolution |
|---------------------------|-------------------------|---|--|
| BigEye4200KMB BM94200B | 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@2048 x2048(12bit) 22@1024 x1024(12bit) |
| BigEye4200KMC BM94200C | 3.0 | High frame rate, RAW12 format | 44@2048 x2048(12bit) 44@1024 x1024(12bit) |
| BigEye4200KMD BM94200D | 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@2048 x2048(16bit) 44@1024 x1024(16bit) |

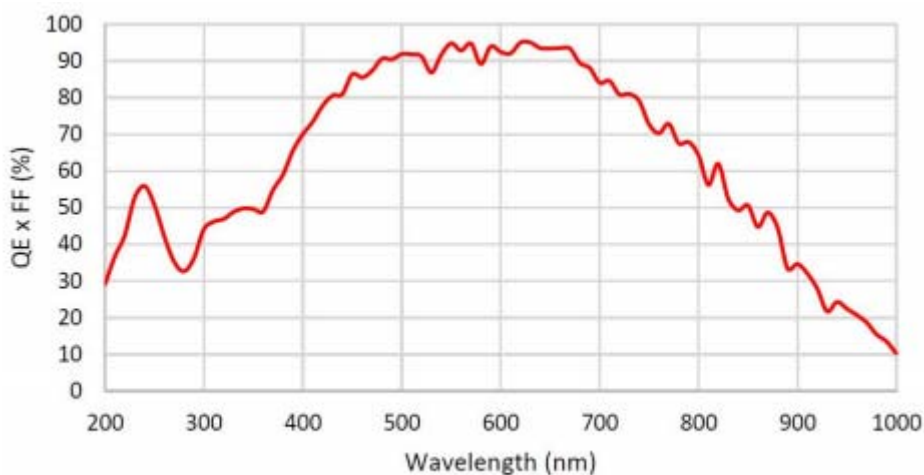
The hardware of [BigEye4200KMB](#), [BigEye4200KMC](#), [BigEye4200KMD](#) are the same.



Spectral response of GSENSE2020e and GSENSE2020s



Spectral Response of GSENSE2020BSI



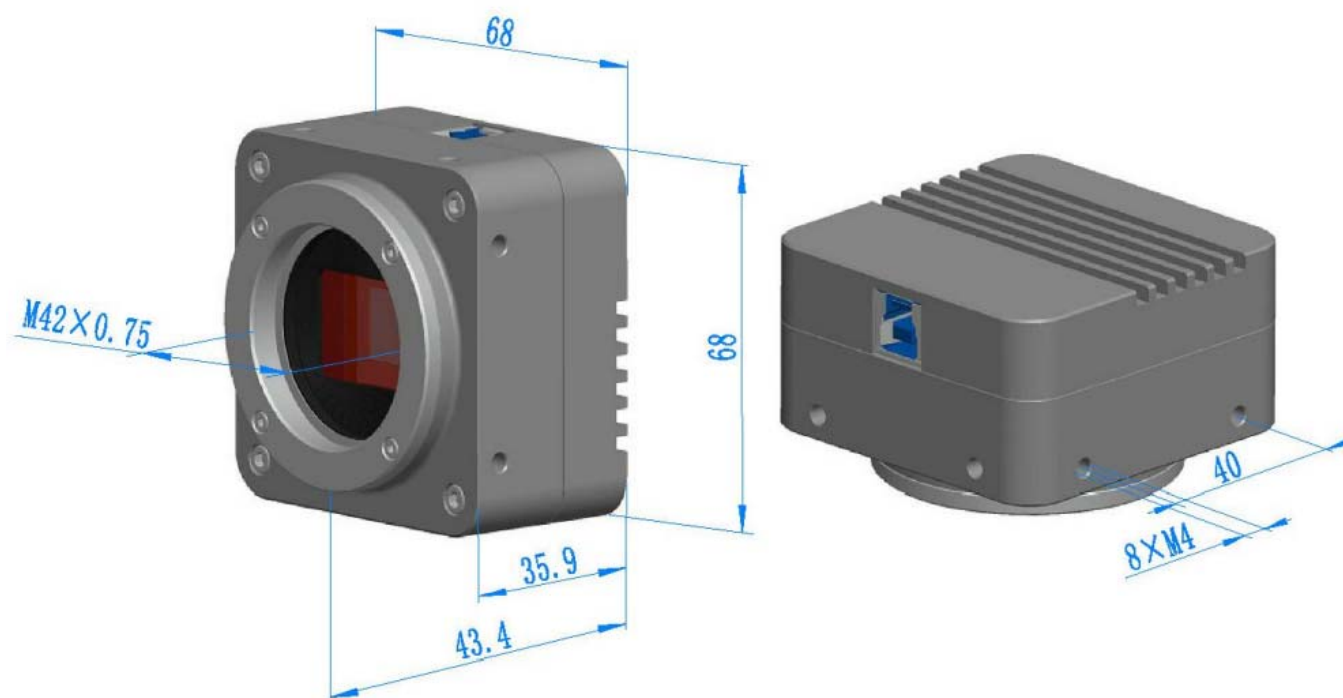
Spectral Response of GSENSE400BSI

Specifications

| Other Specification for BigEye Camera | |
|---------------------------------------|--|
| Spectral Range | 200-1100nm (UV without IR-cut Filter) or 400-900nm |
| White Balance | ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor |
| Color Technique | Ultra-fine™ HISPVP /NA for Monochromatic Sensor |
| 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(in Centidegree) | -10~ 50 |
| Storage Temperature(in Centidegree) | -20~ 60 |
| Operating Humidity | 30~80%RH |
| Storage Humidity | 10~60%RH |
| Power Supply | DC 5V over PC USB Port |
| Software Environment | |
| Operating System | Microsoft® Windows® XP / Vista / 7 / 8 /10 (32 & 64 bit) OSx(Mac OS X) Linux |
| PC Requirements | CPU: Equal to Intel Core2 2.8GHz or Higher |
| | Memory: 2GB or More |
| | USB Port: USB3.0 High-speed Port |
| | Display: 17" or Larger |
| | CD-ROM |

Sdizes of BigEye-Series

The BigEye body, made from tough, CNC aluminum alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT or AR glass 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 solutio



Packing Information and Options



Supplied with: B, C, D, E,

| Standard Camera Packing List | |
|--|---|
| A | Carton L:52cm W:32cm H:33cm (20pcs, 12~17Kg/ carton), not shown in the photo |
| B | Gift box L:15cm W:15cm H:10cm (0.58~0.6Kg/ box) |
| C | BigEye series USB3.0 C-mount CMOS camera |
| D | High-speed USB3.0 A male to B male gold-plated connectors cable /2.0m |
| E | CD (Driver & utilities software, Ø12cm) |
| Optional Accessory | |
| F | M42x0.75mm-mount to C-mount converter (If C-mount adapter is used) |
| G | M42x0.75mm-mount to F-mount converter (If F-mount lens is used) |
| H | Phototube to M42x0.75 mount adapter (U-TV1.2XT2) for Olympus microscope |
| I | Phototube to M42x0.75 mount adapter (MQD42120 MBB42120) for Nikon microscope |
| J | Phototube to M42x0.75 mount adapter (P95-T2 4/ P95-C 1" 1.0 x 3" 1.2x) for Zeiss Primo Star series , Zeiss Primo vert series microscope |
| K | Phototube to M42x0.75 mount adapter (11541510-120 HT2-1.2X) for Leica microscope |
| L | Phototube to M42x0.75 mount adapter (60N-T2 4/3" 1.2x) for Zeiss Axio series microscope |
| Note: For 4/3" sensor, 1.2X adapter with M42x0.75 mount should be chosen, for the 1.2" sensor, 1.0X adapter with C-mount could be used to get the better FOV; | |
| M | Calibration kit 106011/TS-M1(X=0.01mm/100Div.); 106012/TS-M2(X,Y=0.01mm/100Div.); 106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.) |

Optional accessories:Adapters F,G, H, I, J, K, L, glas scalen M are not included

BigEye in combination with Verbindung adaptern and objectives



BigEye+F-mount



BigEye + F-mount+Lens



BigEye with F-mount+Lens



BigEye with F-mount and Lens

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