



Microscope USB3.0 CMOS Camera

MCMOS Series



2022 V1

For customized projects please Contact us:

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Microscope USB3.0 CMOS Camera – MCMOS Series is a Compact & high-performance USB3.0 CMOS series camera, it adopts Sony or OnSemi CMOS sensor as the image-picking device, and USB3.0 is used as the data transfer interface.

MCMOS series hardware resolutions range from 0.4M to 20M and come with compact CNC aluminum alloy housing.



Features

- With hardware resolution among 0.4M to 20M;
- Compact CNC aluminum alloy housing;
- USB3.0 5 Gbps interface ensuring high frame rate;
- Ultra-Fine color engine with perfect color reproduction capability;
- Standard C-Mount camera with Sony or OnSemi CMOS sensor;
- With advanced video & image processing applications;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.NET, DirectShow, Twain Control API.

Specifications

Hardware resolutions range from 3.5M to 10M

| Order Code | Sensor & Size | Pixel(μm) | G Responsivity Dynamic range SNRmax | FPS/Resolution | Binning | Exposure |
|----------------------------------|--------------------------------------|-----------|---|---|-------------------|--------------|
| MCMOS12000KPA CP112000A(2022) | 12M/IMX577(C) 1/2.1" (5.95x4.71) | 1.55x1.55 | 250mv with 1/30s 0.25mv with 1/30s | 7.5@3840x3040 43@1920x1516 122@960x758 | 1x1 2x2 4x4 | 0.1ms~2000ms |
| MCMOS10000KPA CP110001A(2022) | 10M/IMX577(C) 1/2.3" (5.68x4.26) | 1.55x1.55 | 250mv with 1/30s 0.25mv with 1/30s | 8.5@3664x2748 49@1832x1374 137@912x686 | 1x1 2x2 4x4 | 0.1ms~2000ms |
| MCMOS05100KPA CP105100A(2022) | 5.1M/AR0521(C) 1/2.5" (5.70x4.28) | 2.2x2.2 | 18.8ke-/lux 73dB 40dB | 15.5@2592x1944 49.5@1296x972 97.5@648x486 | 1x1 2x2 4x4 | 0.1ms~2000ms |
| MCMOS05100KPB CP105100B(2020) | 5.1M/IMX335(C) 1/2.8" (5.18x3.89) | 2.0x2.0 | 505mV 70dB 43dB | 25@2592x1944 40@1296x972 | 1x1 2x2 | 0.1ms~2000ms |
| MCMOS03500KPA CP103500A(2020) | 3.5M/SC4236(C) 1/2.6" (5.76x3.84) | 2.5x2.5 | 3.0v/lux-sec 72dB 37dB | 30@2304x1536 30@1152x768 | 1x1 | 0.1ms~2000ms |

* C: Color; M: Monochrome; Default shutter: Rolling Shutter

Specifications

With SONY Exmor CMOS sensor / Hardware resolutions range from 0.4M to 20M

| Order Code | Sensor & Size(mm) | Pixel(μm) | G Sensitivity Dark Signal | FPS/Resolution | Binning | Exposure |
|---------------------------------|---|-------------|--|---|--|-----------------|
| MCMOS45000KMA EM145000A | 45M/IMX492(M) 4/3"(19.11x13.00) | 2.315x2.315 | 176mv with 1/30s 0.03mv with 1/30s | 8.1@8176x5616 30.0@4080x2808 8.1@7408x5556 33.0@3696x2778 10.4@8176x4320 34.7@4096x2160 62.5@2048x1080 86.5@1360x720 | 1x1(3:2) 2x2(3:2) 1x1(4:3) 2x2(4:3) 1x1(17:9) 2x2(17:9) 3x3(17:9) 4x4(17:9) | 0.1ms~15s |
| MCMOS20000KMA EM120000A(New) | 20M/IMX183(M) 1"(13.06x8.76) | 2.4 x2.4 | 776mv with 1/30s 0.21mv with 1/30s | 17.5@5440x3648 40@4080x2160 48@2736x1824 60@1824x1216 | 1x1 1x1 2x2 3x3 | 0.1ms~60s |
| MCMOS20000KPB EP120000B(New) | 20M/IMX147(C) 1/2.1"(6.24x4.67) | 1.2 x1.2 | 130mv with 1/30s 0.1mv with 1/30s | 5.2@5200x3888 15@2592x1944 30@1728x1296 | 1x1 2x2 3x3 | 0.1ms~15s |
| MCMOS12300KMA EM112300A(New) | 12.3M/IMX304(M) 1.1"(14.13x10.35) | 3.45 x3.45 | 1146mv with 1/30s 0.1mv with 1/30s | 23.4@4096x3000 46.3@2048x1500 | 1x1 1x1 | 0.244ms~15s |
| MCMOS12000KPA EP112000A | 12M/IMX226(C) 1/1.7"(7.40x5.55) | 1.85x1.85 | 280mv with 1/30s 0.1mv with 1/30s | 7.1@4000x3000 30@2048x1080 | 1x1 2x2 | 0.244ms~2000ms |
| MCMOS06300KPA EP106300A | 6.3M/IMX178(C) 1/1.8" (7.37x4.92) | 2.4x2.4 | 425mv with 1/30s 0.15mv with 1/30s | 15@3072 x2048 26@1536x 1024 | 1x1 2x2 | 0.244ms~2000ms |
| MCMOS06300KMA EM106300A | 6.3M/IMX178(M) 1/1.8" (7.37x4.92) | 2.4x2.4 | 425mv with 1/30s 0.15mv with 1/30s | 30@3072 x2048 50@1536x 1024 | 1x1 2x2 | 0.244ms~2000ms |
| MCMOS05000KMA EM105000A | 5.0M/IMX264(M, GS) 2/3" (8.45x7.07) | 3.45x3.45 | 1830mv with 1/30s 0.15mv with 1/30s | 35@2448x2048 60@1224x1024 | 1x1 2x2 | 0.1ms~60s |
| MCMOS03100KPB EP103100B | 3.1M/IMX123(C) 1/2.8" (5.12x3.84) | 2.5x2.5 | 600mv with 1/30s 0.15mv with 1/30s | 25@2048x1536 30@1920x1080 | 1x1 | 0.244ms~2000ms |
| MCMOS03100KMC EM103100C | 3.1M/IMX265(M, GS) 1/1.8"(7.07x5.30) | 3.45x3.45 | 1146mv with 1/30s 0.15mv with 1/30s | 53@2048x1536 85@1024x768 | 1x1 | 0.1ms~15s |
| MCMOS02300KPA EP102300A | 2.3M/IMX185© 1/1.9" (7.20x4.50) | 3.75x3.75 | 1120mv with 1/30s 0.15mv with 1/30s | 38@1920x1200 66@960x600 | 1x1 2x2 | 0.244ms ~2000ms |
| MCMOS02300KPB EP102300B | 2.3M/IMX249(C, GS) 1/1.2" (11.25x7.03) | 5.86x5.86 | 1016mv with 1/30s 0.15mv with 1/30s | 30@1920x1200 | 1x1 | 0.244ms~2000ms |
| MCMOS02300KMC EM102300C | 2.3M/IMX174(M, GS) 1/1.2" (11.25x7.03) | 5.86x5.86 | 1016mv with 1/30s 0.15mv with 1/30s | 120@1920x1200 | 1x1 | 0.244ms~2000ms |
| MCMOS01500KMA EM101500A | 1.5M/IMX273(M, GS) 1/2.9"(4.968x3.726) | 3.45x3.45 | 915mv with 1/30s(F8.0) 0.15mv with 1/30s | 228@1440x1080 530@720x540 | 1x1 2x2 | 0.1ms~60s |
| MCMOS01200KPA EP101200A | 1.2M/IMX224(C) 1/3"(4.80x3.60) | 3.75 x3.75 | 2040mv with 1/30s 0.15mv with 1/30s | 60@1280x960 120@640x480 | 1x1 2x2 | 0.105ms~15s |
| MCMOS00400KPA EP100400A | 0.4M/IMX287(C, GS) 1/2.9"(4.97x3.73) | 6.9x6.9 | 4584mv with 1/30s 0.15mv with 1/30s | 520@720x540 | 1x1 | 0.244ms~15s |
| MCMOS00400KMA EM100400A | 0.4M/IMX287(M, GS) 1/2.9"(4.97x3.73) | 6.9x6.9 | 7469mv with 1/30s 0.15mv with 1/30s | 520@720x540 | 1x1 | 0.244ms~15s |

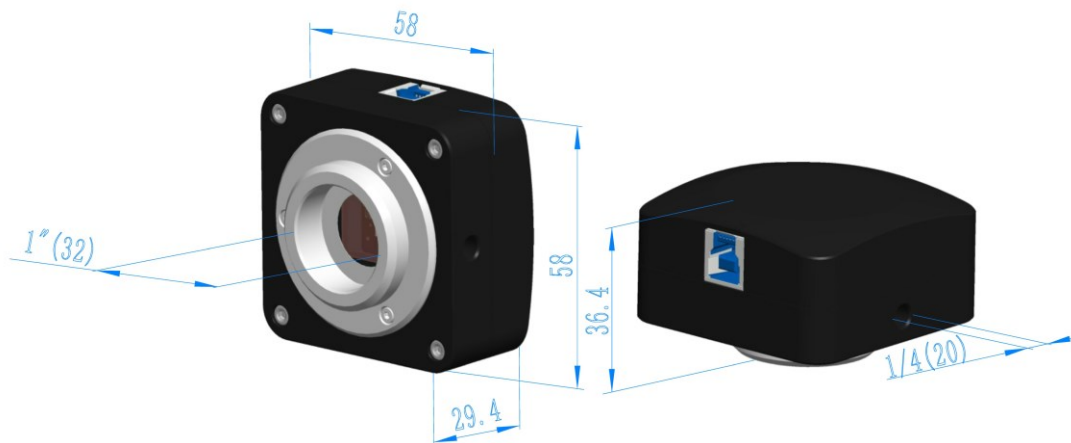
* C: Color; M: Monochrome; GS: Global Shutter

Specifications

| Other Specification for MCMOS Series | |
|--|--|
| Spectral Range | 380-650nm (with IR-cut Filter) |
| White Balance | ROI White Balance/ Manual Temp Tint Adjustment/ NA for Monochromatic Sensor |
| Color Technique | Ultra-Fine Color Engine/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 /11 (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 |

Dimension

The MCMOS body, made from tough, 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.






Packing Information



| Standard Package | |
|--------------------|---|
| A | Carton L:50cm W:30cm H:30cm (20pcs, 12~17Kg/ carton), not shown in the photo |
| B | Gift box L:15cm W:15cm H:10cm (0.67~0.7Kg/ box) |
| C | One MCMOS series 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 | Adjustable lens adapter |
| | C-mount to Dia. 23.2mm eyepiece tube C-mount to Dia. 31.75mm eyepiece tube |
| G | Fixed lens adapter |
| | C-mount to Dia. 23.2mm eyepiece tube C-mount to Dia. 31.75mm eyepiece tube |
| H | 108015(Dia.23.2mm to 30.0mm ring)/Adapter rings for 30mm eyepiece tube |
| I | 108016(Dia.23.2mm to 30.5mm ring)/Adapter rings for 30.5mm eyepiece tube |
| J | 108016(Dia.23.2mm to 30.5mm ring)/Adapter rings for 30.5mm eyepiece tube |
| K | 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.) |

Note: For F and G optional items, please specify your camera type (C-mount, microscope camera, or telescope camera), SIMTRUM will help you to determine the right microscope or telescope camera adapter for your application.

Extension of MCMOS Series with Microscope / Telescope Adapter

| Extension | Picture |
|--------------------------|--|
| C-mount Camera |  <p>Machine vision; Medical imaging; Semiconductor equipment; Test instruments; Document scanners; 2D barcode readers; Web camera and security video; Microscope imaging;</p> |
| Microscope Camera |  <p>MCMOS + AMAXXX(23.2mm Adapter) MCMOS + FMAXXX(23.2mm Adapter)</p> |
| Telescope Camera |  <p>MCMOS + AMAXXX(31.75mm Adapter) MCMOS + FMAXXX(31.75mm Adapter)</p> |