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

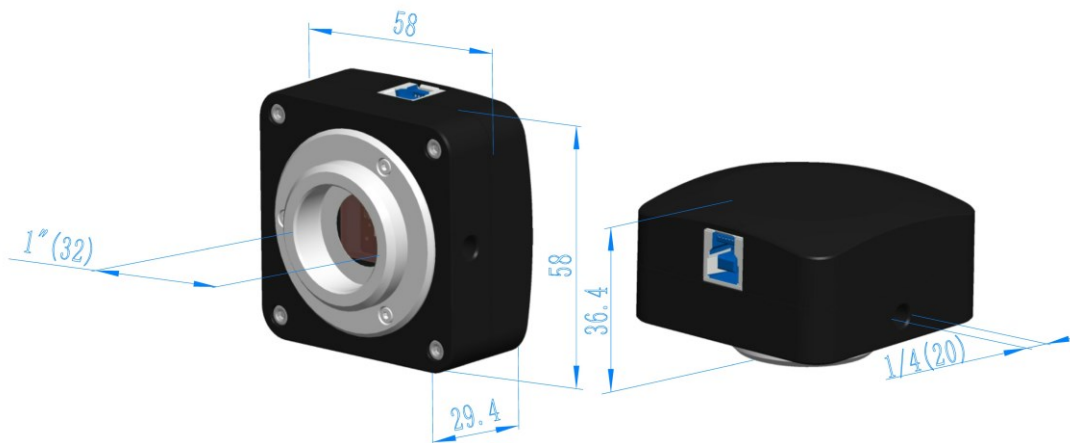| Order Code	Sensor & Size(mm)	Pixel(µm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
MCMOS45000KMA EM145000A	45M/IMX492(M) 4/3"(19.11x13.00)	2.315x2.315	176mv with 1/30s 0.03mv with 1/30s	8.1@8176x5616 30.0@4080x2808 8.1@7408x5556 33.0@3696x2778 10.4@8176x4320 34.7@4096x2160 62.5@2048x1080 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		Machine vision; Medical imaging; Semiconductor equipment; Test instruments; Document scanners; 2D barcode readers; Web camera and security video; Microscope imaging;
Microscope Camera	MCMOS + AMAXXX(23.2mm Adapter)	MCMOS + FMAXXX(23.2mm Adapter)
Telescope Camera	MCMOS + AMAXXX(31.75mm Adapter)	MCMOS + FMAXXX(31.75mm Adapter)

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