



## E3CMOS Series C-mount USB3.0 CMOS Camera

E3CMOS adopt SONY Exmor CMOS sensor as the image-picking device and USB2.0 is used as the data transfer interface.

E3CMOS hardware resolutions range from 1.2M to 8.3M and come with the integrated CNC aluminum alloy compact housing.

E3CMOS 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 E3CMOS can be widely used in bright field light environment and microscope image capture and analysis with higher frame rate.



- SONY Exmor, Exmor R(Back-illuminated), Exmor RS CMOS sensor with USB3.0 interface;
- Real-time 8/12/14/16bit depth switch(depending on sensor);
- Super high sensitivity up to 1120mV(IMX185);
- Ultra-low noise and low power dissipation by using column-parallel A/D conversion;
- With hardware resolution among 0.4M to 20M;
- Rolling shutter or global shutter;
- Standard C-Mount camera;
- CNC aluminum alloy housing;
- USB3.0 5Gbps interface ensuring high frame rates;
- With advanced video & image processing application ToupView/ToupLite;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.Net, DirectShow, Twain, LabView

# Related Models

## Model in Stock E3CMOS 2000KPA

Order Code	Sensor & Size (mm)	Pixel (µm)	G Sensitivity Dark Signal	FPS/Resolution ADC	Binning	Exposure
E3CMOS45000KMA	45M/IMX492(M,RS) 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 8 Bit / 12 Bit	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
E3CMOS20400KMA	20.4M/IMX541(M,GS) 1.1" (12.32x12.32)	2.74 x2.74	2649mv with 1/30s 0.15mv with 1/30s	17.5@4496x4496 64.4@2240x2240 64.4@1120x1120	1x1 2x2 4x4	0.03ms~15s
E3CMOS20000KMA	20M/IMX183(M,RS) 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 8 Bit / 12 Bit	1x1 1x1 2x2 3x3	0.1ms~60s
E3CMOS20000KPB	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 8 Bit / 12 Bit	1x1 2x2 3x3	0.1ms~15s
E3CMOS12400KMA	12.4M/IMX545(M,GS) 1/1.1" (11.22x8.22)	2.74 x2.74	2252mv with 1/30s 0.15mv with 1/30s	28.2@4096x3000 100.9@2048x1500 100.9@1024x750	1x1 2x2 4x4	0.03ms~15s
E3CMOS12300KMA	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 8 Bit / 12 Bit	1x1 1x1	0.244ms~15s
E3CMOS12000KPA	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 8 Bit / 12 Bit	1x1 2x2	0.244ms~2000ms
E3CMOS06300KPA	6.3M/IMX178(C,RS) 1/1.8" (7.37x4.92)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	15@3072 x2048 26@1536x 1024 8 Bit / 14 Bit	1x1 2x2	0.244ms~2000ms
E3CMOS06300KMA	6.3M/IMX178(M,RS) 1/1.8" (7.37x4.92)	2.4x2.4	760mv with 1/30s 0.15mv with 1/30s	30@3072 x2048 50@1536x 1024 8 Bit / 14 Bit	1x1 2x2	0.244ms~2000ms
E3CMOS05100KMA	5.1M/IMX547(M,GS) 1/1.8" (6.71x5.61)	2.74x2.74	2252mv with 1/30s 0.15mv with 1/30s	63@2448x2048 208.4@1224x1024	1x1 2x2	0.03ms~15s
E3CMOS05000KMA	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 8 Bit / 12 Bit	1x1 2x2	0.1ms~60s
E3CMOS03100KPB	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 8 Bit / 14 Bit	1x1 1x1	0.244ms~2000ms
E3CMOS03100KMC	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 8 Bit / 12 Bit	1x1 2x2	0.1ms~15s
E3CMOS02300KPA	2.3M/IMX185(C) 1/1.9" (7.20x4.50)	3.75x3.75	1120mv with 1/30s 0.15mv with 1/30s	38@1920x1200 66@960x600 8 Bit / 12 Bit	1x1 2x2	0.244ms ~2000ms
E3CMOS02300KPB	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 8 Bit / 12 Bit	1x1	0.244ms~2000ms
E3CMOS02300KMC	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 8 Bit / 12 Bit	1x1	0.244ms~2000ms
E3CMOS01500KMA	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 8 Bit / 12 Bit	1x1 2x2	0.1ms~60s
E3CMOS01200KPA	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 8 Bit / 12 Bit	1x1 2x2	0.105ms~15s
E3CMOS00400KPA	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 8 Bit / 12 Bit	1x1	0.244ms~15s
E3CMOS00400KMA	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 8 Bit / 12 Bit	1x1	0.244ms~15s

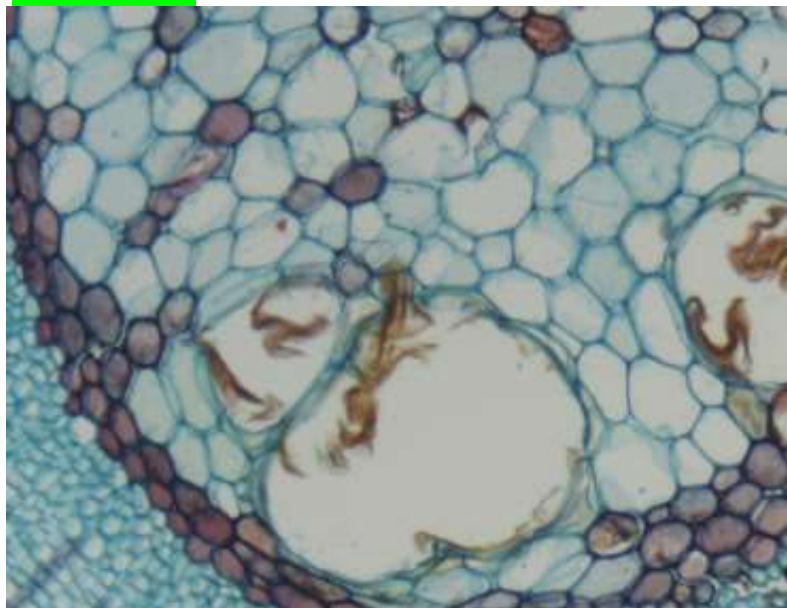
## Specification

Other Specification	
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	

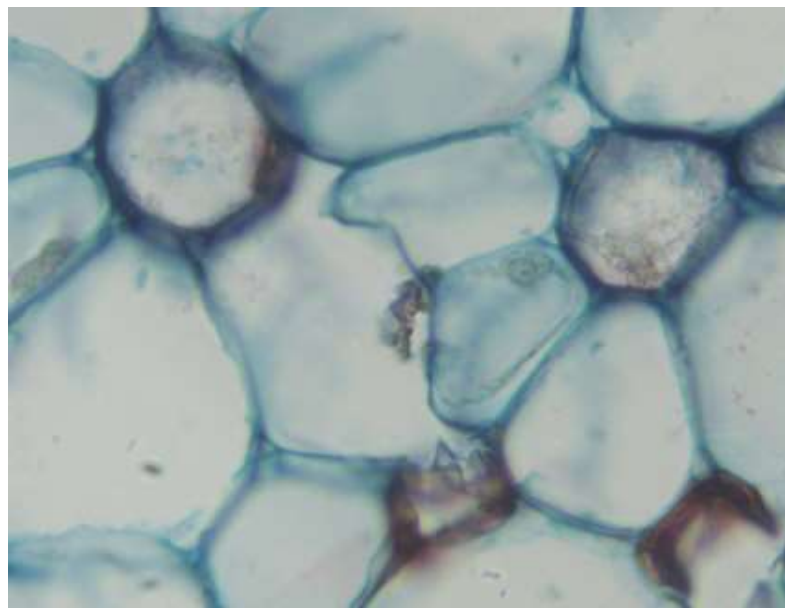
## Application

The E3CMOS series can be widely used in bright field light environment and microscope image capture and analysis with higher frame rate.

## Instance

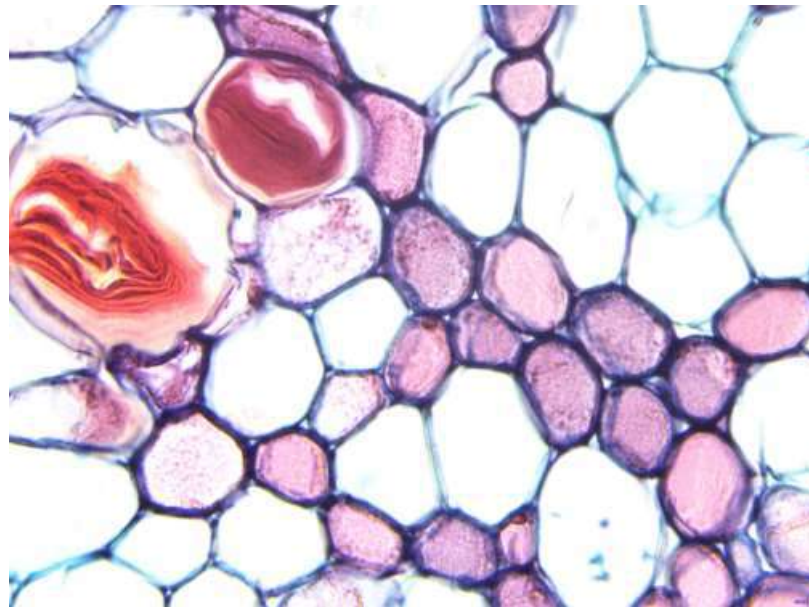
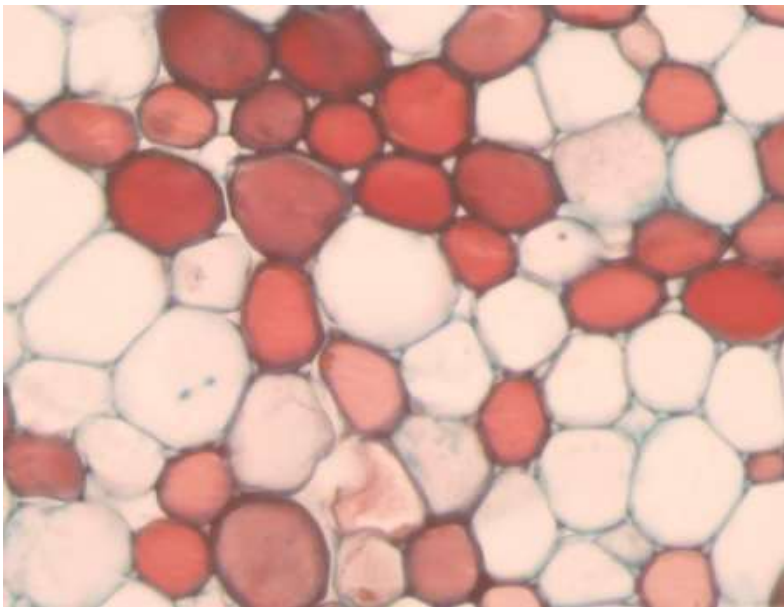


Plant Cell

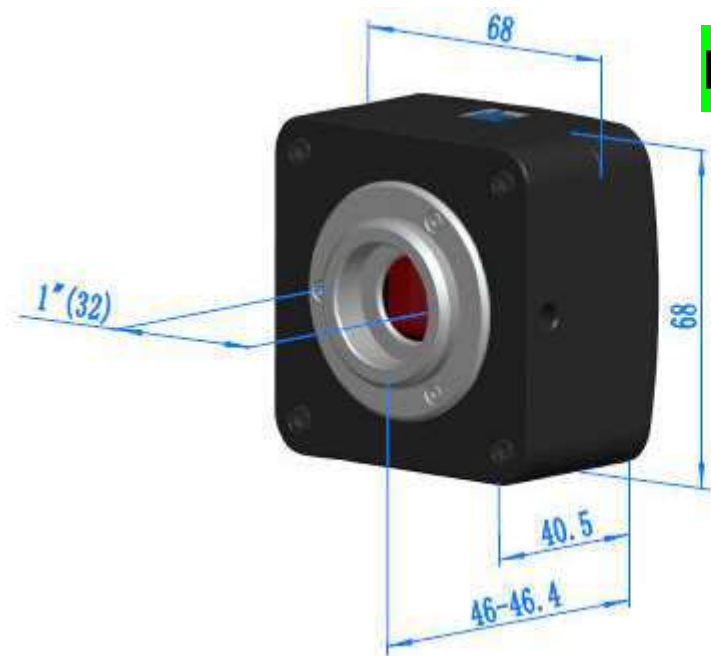


Cross-section of a water lily stem





### E3CMOS Camera Dimensions



### Packing List



## Packing Information of E3CMOS Series

### 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	One E3CMOS 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 (Please choose 1 of them for your microscope)	108001/AMA037 108002/AMA050 108003/AMA075 108004/AMA100
		C-mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	108008/ATA037 108009/ATA050 108010/ATA075 108011/ATA100
G	Fixed lens adapter	C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	108005/FMA037 108006/FMA050 108007/FMA075 108008/FMA100
		C-Mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	108011/FTA037 108012/FTA050 108013/FTA075 108014/FTA100

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

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	108017(Dia.23.2mm to 31.75mm Ring)/ Adapter rings for 31.75mm 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.)