

10.5 UCMOS Series C-mount USB2.0 CMOS Camera

10.5.1 UCMOS Basic Characteristic

UCMOS is an ultra-high performance CMOS camera and it adopts ultra-high performance CMOS sensor as the image-picking device. USB2.0 is used as the data transfer interface.

UCMOS hardware resolutions ranges from 0.35M to 14M and comes with the CNC aluminum alloy compact housing. UCMOS comes with advanced video & image processing application ToupView; Providing Windows/Linux/OSX multiple platform SDK; Native C/C++, C#/VB.NET, DirectShow, Twain Control API; The UCMOS can be widely used in bright field light environment and microscope image capture and analysis with moderate frame rate.

The basic characteristic of UCMOS cameras are as follows:

- Standard C-Mount with Aptina CMOS sensor;
- With hardware resolution among 0.35M to 14M;
- CNC aluminum alloy housing;
- USB2.0 interface ensuring high speed data transmission;
- Ultra-Fine™ color engine with perfect color reproduction capability;
- With advanced video & image processing application ToupView;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.NET, DirectShow, Twain Control API;



10.5.2 UCMOS Datasheet(10)

Order Code	Sensor & Size(mm)	Pixel(μm)	G Responsivity Dynamic range SNRmax	FPS/Resolution	Binning	Exposure
UCMOS14000KPA TP614000A	14M/MT9F002(C) 1/2.3"(5.73x4.60)	1.4x1.4	0.724v/lux-sec 65.3dB 35.5dB	1.8@4096x3288 10@2048x1644 27@1024x822	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS10000KPA TP610000A	10M/MT9J003(C) 1/2.3"(5.98x4.59)	1.67x1.67	0.31v/lux-sec 65.2dB 34dB	1.9@3584x2748 8@1792x1374 27@896x684	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS09000KPB TP609000B	9M/Special(C) 1/2.4"(5.83x4.37)	1.67x1.67	0.31v/lux-sec 65.2dB 34dB	1.9@3488x2616 8@1744x1308 27@872x654	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS08000KPB TP608000B	8M/Special(C) 1/2.5"(5.45x4.09)	1.67x1.67	0.31v/lux-sec 65.2dB 34dB	1.9@3264x2448 8@1600x1200 27@800x600	1x1, 2x2, 4x4	0.4ms~2000ms
UCMOS05100KPA TP605100A	5.1M/MT9P006(C) 1/2.5"(5.70x4.28)	2.2x2.2	0.53 V/lux-sec 66.5dB 40.5dB	5@2592x1944 18@1280x960 60@640x480	1x1, 2x2, 4x4	0.294ms~2000ms
UCMOS03100KPA TP603100A	3.1M/MT9T001(C) 1/2"(6.55x4.92)	3.2x3.2	1.0 V/lux-sec 61dB 43dB	8@2048x1536 22@1024x768 43@680x510	1x1, 2x2, 3x3	0.244ms~2000ms
UCMOS02000KPB TP602000B	2.0M/Special(C) 1/2.6"(5.12x3.84)	3.2x3.2	1.0 V/lux-sec 61dB 43dB	16@1600x1200 50@800x600	1x1, 2x2	0.128ms~2000ms
UCMOS01300KPA TP601300A	1.23M/SC1235(C) 1/3"(4.80x3.60)	3.75x3.75	4.5V/lux-sec 74dB 38dB	15@1280x960 15@1280x720	1x1, 1x1	0.14ms~2000ms
UCMOS01300KMA TM601300A	1.3M/MT9M001(M) 1/2"(6.66x5.32)	5.2x5.2	2.1 V/lux-sec 68.2dB 45dB	20@1280x1024	1x1	0.14ms~500ms
UCMOS00350KPA TP600350A	0.35M/MT9V011(C) 1/4"(3.58x2.69)	5.6x5.6	1.9V/lux-sec 60dB 45dB	30@640x480 80@320x240	1x1, 2x2	0.111ms~192ms

C: Color; M: Monochrome;

Other Specification for UCMOS Camera

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

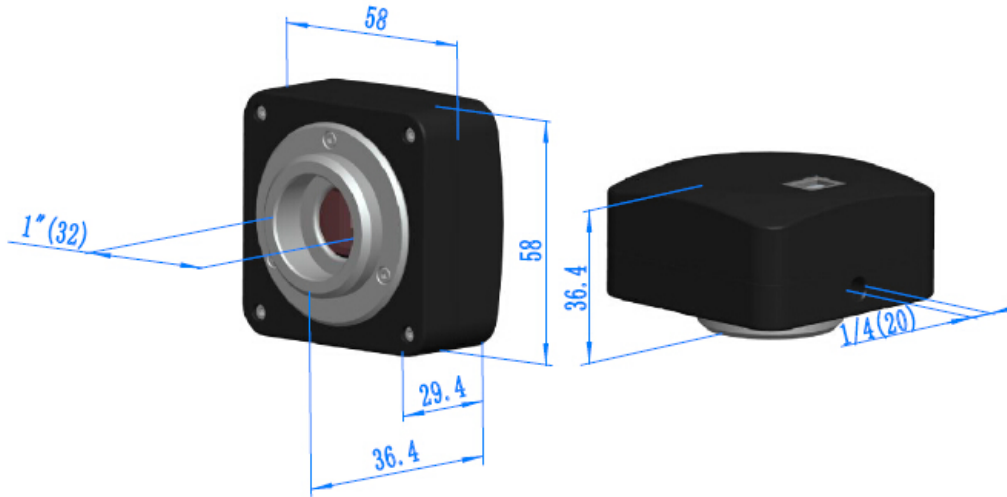
Operating Temperature(in Centidegree)	-10~ 50
Storage Temperature(in Centidegree)	-20~ 60
Operating Humidity	30~80%RH
Storage Humidity	10~60%RH
Power Supply	DC 5V over PC USB Port

Software Environment

Operating System	Microsoft® Windows® XP / Vista / 7 / 8 / 10 (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:USB2.0 High-speed Port
	Display:17" or Larger
	CD-ROM

10.5.3 Dimension of UCMOS

The UCMOS 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.



Dimension of UCMOS

10.5.4 Packing Information for UCMOS



Packing Information of UCMOS

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 (0.5~0.55Kg/ box)
C	UCMOS series USB2.0 C-mount CMOS camera
D	High-speed USB2.0 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
		C-mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	108008/ATA037 108009/ATA050 108010/ATA075
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
		C-mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	108011/FTA037 108012/FTA050 108013/FTA075
<p>Note: For F and G optional items, please specify your camera type(C-mount, microscope camera or telescope camera) , ToupTek engineer will help you to determine the right microscope or telescope camera adapter for your application;</p>			
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.)	

10.5.5 Extension of UCMOS with Microscope or Telescope Adapter

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