BUC5F Series C-mount USB3.0 CMOS Camera(HISPVP)

BUC5F series USB3.0 digital cameras adopt SONY Exmor CMOS sensor as the image-picking device and USB3.0 is used as the transfer interface.

BUC5F series cameras hardware resolutions range from 1.5MP to 45MP and come with the integrated CNC aluminum alloy compact housing.

BUC5F series cameras integrated with 12 bit Ultra-fine™ Hardware Image Signal Processor Video Pipline(Ultra-fine™ HISP VP) for Demosaic, Automatic Exposition, Gain Adjustment, One Push White Balance, Chrominance Adjustment, Saturation Adjustment, Gamma Correction, Luminance Adjustment, Contrast Adjustment, Bayer and finally form RAW data for 8/12 bit output. This will move the heavy burden of the processing from the PC to the Ultra-fine™ HISP VP and greatly accelerating the processing speed.

BUC5F series cameras come with advanced video & image processing application ImageView; Providing Windows/ Linux/ macOS/ Android multiple platforms SDK (Native C/C++, C#/VB.NET, Python, Java, DirectShow, Twain, etc).

The BUC5F series cameras can be widely used in bright field, dark field, fluorescent light environment and normal microscope image capture and analysis with higher frame rate.

Feature

The basic characteristic of BUC5F series cameras are as follows:

1. SONY Exmor, Exmor R(Back-illuminated), Exmor RS CMOS sensor with USB3.0 interface;

2. Real-time 8/12bit depth switch(depending on sensor);

3. Ultra-fine™ HISP VP and USB3.0 5 Gbps interface ensuring high frame rates;

4. Super high sensitivity up to 8935mV(IMX482);

5. Ultra low noise and low power dissipation by using column-parallel A/D conversion;

6. With hardware resolution from 2.0M to 45M;

7. Rolling Shutter or Global Shutter;

8. Standard C-Mount camera;

9. CNC aluminum alloy housing;

10. With advanced video & image processing application ImageView;

11. Providing Windows/Linux/Mac OS multiple platforms SDK;

12. Native C/C++, C#/VB.Net, DirectShow, Twain, LabView.

Specification

Order Code	Sensor & Size(mm)	Pixel Size(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
BUC5F-4500C	45M/IMX294(C) 1.4" (18.93x13.00)	2.315x2.315	108mv with 1/30s 0.03mv with 1/30s	8.1@8176x5616 30.0@4088x2808 8.1@7408x5556 33.0@4088x2808 10.4@8176x4320 34.7@4096x2160 62.5@2048x1080 86.5@1344x720	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
BUC5F-4500BC	45M/IMX492(C) 1.4" (18.93x13.00)	2.315x2.315	108mv with 1/30s 0.03mv with 1/30s	8.1@8176x5616(C) 30.0@4080x2808(M) 8.1@7408x5556(C) 33.0@3696x2778(M) 10.4@8176x4320(C) 34.7@4096x2160(M) 62.5@2048x1080(M) 86.5@1344x720(M)	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
BUC5F-3200C	32M/IMX294(C) 1.15" (12.96x12.96)	2.315x2.315	108mv with 1/30s 0.03mv with 1/30s	8.1@5600x5600 30.0@2800x2800 30.0@1400x1400	1x1 2x2 4x4	0.1ms~15s
BUC5F-2500C	25M/IMX511(C) 1/2.3" (5.519x5.519)	1.12x1.12	96.3mv with 1/30s 0.1mv with 1/30s	12@4928x4928 46@2464x2464 100@1648x1648	1x1 2x2 3x3	0.013ms~15s
BUC5F-2100C	21M/IMX269 (C) 4/3" (17.4x13.0)	3.3 x3.3	399mv with 1/30s 0.1mv with 1/30s	17@5280x3954 17@3952x3952	1x1 1x1	0.1ms~15s

				56@2640x1976 67@1760x1316 192@584x438	2x2 3x3 9x9	
BUC5F-2000C	20M/IMX183(C) 1” (13.06x8.76)	2.4 x2.4	462mv with 1/30s 0.21mv with 1/30s	15@5440x3648 50@2736x1824 60@1824x1216	1x1 2x2 3x3	0.1ms~15s
BUC5F-2000CC	20M/IMX183(C) 1” (13.06x8.76)	2.4 x2.4	462mv with 1/30s 0.21mv with 1/30s	20@5440x3648 48@2736x1824 58@1824x1216	1x1 2x2 3x3	0.1ms~15s
BUC5F-1800C	18M/SONY Special(C) 1/2.2” (5.86x4.46)	1.2 x1.2	130mv with 1/30s 0.1mv with 1/30s	17@4880x3720 40@2448x1836 50@1728x1296	1x1 2x2 3x3	0.1ms~15s
BUC5F-1560C	15.6M/SONY Special (C) 1.1” (13.0x13.0)	3.3 x3.3	399mv with 1/30s 0.1mv with 1/30s	17@3952x3952 56@1976x1976 67@1316x1316	1x1 2x2 3x3	0.1ms~15s
BUC5F-1230C	12.3M/IMX304(C, GS) 1.1” (14.13x10.35)	3.45x3.45	1146mv with 1/30s 0.1mv with 1/30s	23.4@4096x3000 46.3@2048x1500	1x1 1x1	0.244ms~15s
BUC5F-1200C	12M/IMX226(C) 1/1.7” (7.40x5.55)	1.85x1.85	280mv with 1/30s 0.1mv with 1/30s	25@4000x3000 50@2048x1080	1x1 2x2	0.1ms~15s
BUC5F-1200BC	12M/IMX577(C) 1/2” (6.29x4.71)	1.55x1.55	250mv with 1/30s 0.25mv with 1/30s	30@4056x3040 60@2028x1520 120@1014x760	1x1 2x2 4x4	0.1ms~5s
BUC5F-900C	9.0M/IMX305(C, GS) 1” (14.13x7.45)	3.45x3.45	1146mv with 1/30s 0.15mv with 1/30s	34@4096x2160 60@2048x1080	1x1 1x1	0.1ms~15s
BUC5F-900BC	9.0M/IMX533(C) 1” (11.31x11.28)	3.76x3.76	535mv with 1/30s 0.04mv with 1/30s	40@3008x3000 123@1488x1500 186@992x998	1x1 2x2 3x3	0.1ms~15s
BUC5F-830CC	8.3M/IMX485(C) 1/1.2” (11.14x6.26)	2.9x2.9	2188mv with 1/30s 0.15mv with 1/30s	45@3840x2160 70@1920x1080	1x1 2x2	0.02ms~15s
BUC5F-830DC	8.3M/IMX585(C) 1/1.2” (11.14x6.26)	2.9x2.9	5970(mV/lx/s) 0.13mv with 1/30s	45@3840x2160 70@1920x1080	1x1 2x2	0.02ms~15s
BUC5F-830EC	8.3M/IMX678(C) 1/1.8” (7.68x4.32)	2.0x2.0	3541(mV/lx/s) 0.15mv with 1/30s	45@3840x2160 70@1920x1080	1x1 2x2	0.02ms~15s
BUC5F-800C	8.0M/IMX294(C) 1.15” (13.00x13.00)	4.63 x4.63	419mv with 1/30s 0.12mv with 1/30s	30@2808x2808 (14bit) 139@1392x1392 139@696x696	1x1 2x2 4x4	0.1ms~15s
BUC5F-630C	6.3M/IMX178(C) 1/1.8” (7.37x4.92)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	30@3072x2048 38@1536x1024	1x1 2x2	0.1ms~15s

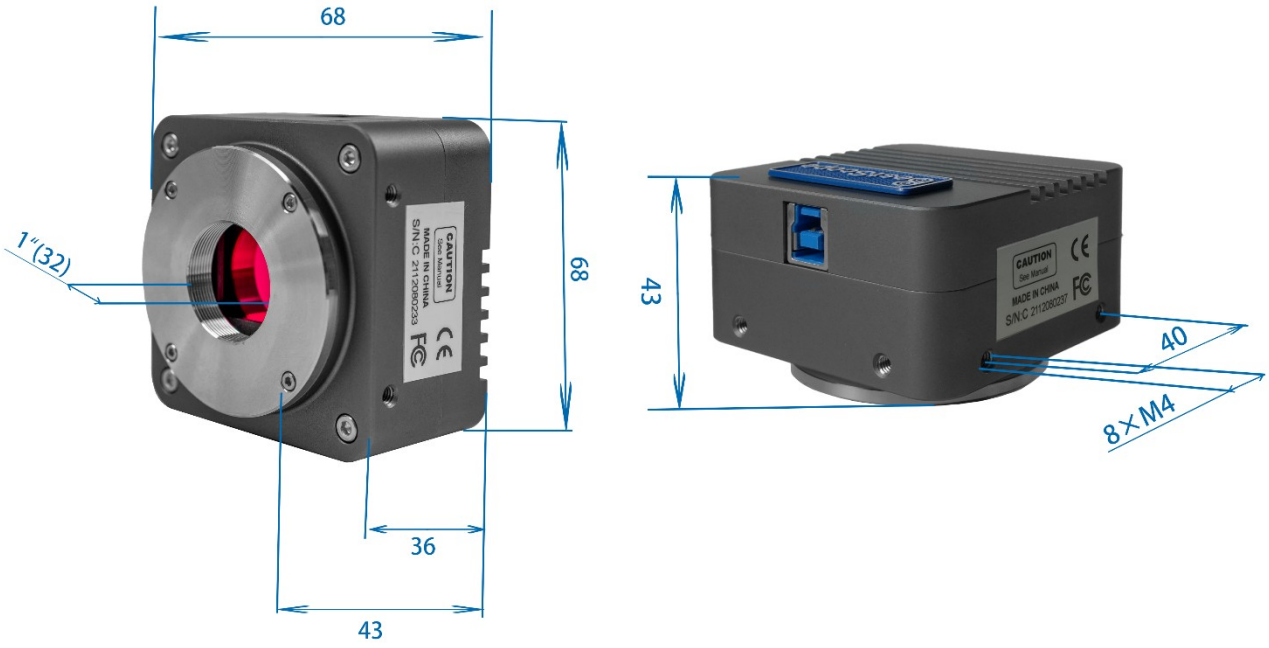
BUC5F-630BC	6.3M/IMX178(C) 1/1.8" (7.37x4.92)	2.4x2.4	425mv with 1/30s 0.15mv with 1/30s	59@3072x2048 59@1536x1024	1x1 2x2	0.02ms~15s
BUC5F-500C	5.0M/IMX264(C, GS) 2/3" (8.45x7.07)	3.45x3.45	1146mv with 1/30s 0.15mv with 1/30s	35@2448x2048 50@1224x1024	1x1 1x1	0.1ms~15s
BUC5F-310C	3.1M/IMX123(C) 1/2.8" (5.12x3.84)	2.5x2.5	600mv with 1/30s 0.15mv with 1/30s	50@2048x1536 50@1920x1080	1x1 1x1	0.1ms~15s
BUC5F-310BC	3.1M/IMX265(C, GS) 1/1.8" (7.07x5.30)	3.45x3.45	1146mv with 1/30s 0.15mv with 1/30s	53@2048x1536 85@1024x768	1x1 1x1	0.1ms~15s
BUC5F-210C	2.1M/IMX482(C) 1/1.2" (11.14x6.26)	5.8x5.8	8935mv with 1/30s 0.6mv with 1/30s	96@1920x1080	1x1	14us~15s
BUC5F-200C	2M/IMX385(C) 1/2" (7.2x4.05)	3.75x3.75	2350mv with 1/30s 0.15mv with 1/30s	125@1920x1080	1x1	0.1ms~15s

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

Other Specification for BUC5F Series Cameras	
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™ HISPVP /NA for Monochromatic Sensor
Capture/Control API	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 Centigrade)	-10~ 50
Storage Temperature (in Centigrade)	-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 BUC5F body, made from tough, CNC aluminum alloy, ensures a heavy duty, workhouse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. These measures ensure a rugged, robust solution with an increased lifespan when compare to other industrial camera solutions.



Packing Information for BUC5F

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	BUC5F 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), we have used USB flash drive to replace the CD.	
Optional Accessory		
F	Adjustable lens adapter	C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)
		C-mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)
G	Fixed lens adapter	C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)
		C-Mount to Dia.31.75mm Eyepiece Tube (Please choose 1 of them for your telescope)
	Note: For F and G optional items, please specify your camera type (C-mount, microscope camera or telescope camera), our engineer will help you to determine the right microscope or telescope camera adapter for your application.	
H	(Dia.23.2mm to 30.0mm Ring)/Adaptor rings for 30mm eyepiece tube	
I	(Dia.23.2mm to 30.5mm Ring)/ Adaptor rings for 30.5mm eyepiece tube	
J	(Dia.23.2mm to 31.75mm Ring)/ Adaptor 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.)

Extension of BUC5F with Microscope or 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	 23.2mm Adjustable Adapter  23.2mm Fixed Adapter	
Telescope Camera	 31.75mm Adjustable Adapte  31.75mm Fixed Adapter	

Sample Image