BUC5IB Series Cooled C-mount USB3.0 CMOS Camera

(Both cylindrical and cuboid housing are available)

BUC5IB series cameras have adopted SONY Exmor CMOS sensor as the image-picking device and USB3.0 is used as the transfer interface to increase the frame rate.

With the two-stage peltier cooling sensor chip to -42 degree below ambient temperature. This will greatly increase the signal to noise ratio and decrease the image noise. Smart structure is designed to assure the heat radiation efficiency and avoid the moisture problem. Electric fan is used to increase the heat radiation speed.

BUC5IB series cameras come with advanced video & image processing application ImageView; Providing Windows/Linux/OSX multiple platform SDK; Native C/C++, C#/VB.NET, DirectShow, Twain Control API.

The BUC5IB series cameras can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy deep sky applications.

Feature

The basic characteristic of BUC5IB can be summarized as follows:

1. Standard C-Mount camera with SONY Exmor CMOS sensors from 1.7M to 45M;

2. Two-stage TE-cooling with controllable electric fan;

3. Sensor chip cooling up to 42°C below ambient temperature;

4. Working temperature can be regulated to specified temperature in 5 minutes;

5. Smart structure to assure the heat radiation efficiency and avoid the moisture problem;

6. IR-CUT/AR coated windows;

7. Up to 1 hour long time exposure;

8. USB3.0 5Gbit/second interface ensuring high speed data transmission;

9. Ultra-Fine^{TM} color engine with perfect color reproduction capability;

10. With advanced video & image processing application ImageView;

11. Support both video and trigger modes;

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

13. Native C/C++, C#/VB.NET, DirectShow, Twain control API.

Specification

Model	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
BUC5IB-4500M	45M/IMX492(M) 4/3 "(19.11x13.00)	2.32 x2.32	351mV with 1/30s 0.12mV with 1/30s	8@8256x5616 31@4128x2808	1x1 2x2	0.1ms~3600s
BUC5IB-2600C	26M/IMX571(C) 1.8 "(23.48x15.67) APS-C	3.76 x3.76	485mv with 1/30s 0.07mv with 1/30s	6.8@6224x4168(16bit) 14@6224x4168 37@3104x2084 110@2064x1386	1x1 1x1 2x2 3x3	0.1ms~3600s
BUC5IB-2600M	26M/IMX571(M) 1.8 "(23.48x15.67) APS-C	3.76x3.76	871mv with 1/30s 0.070mv with 1/30s	6.8@6224x4168(16bit) 14@6224x4168 37@3104x2084 110@2064x1386	1x1	0.1ms~3600s
BUC5IB-2100C	21M/IMX269(C) 4/3 "(17.4x13.1)	3.3 x3.3	400mv with 1/30s 0.1mv with 1/30s	5@5280x3956 6@3952x3952 15@2640x1978 50@1760x1318 100@584x440	1x1 1x1 2x2 3x3 9x9	0.1ms~3600s
BUC5IB-2000C	20M/IMX183(C) 1 "(13.056x8.755)	2.4 x2.4	462mv with 1/30s 0.21mv with 1/30s	5@5440x3648 10@4096x2160 15@2736x1824 30@1824x1216	1x1, 1x1, 2x2, 3x3	0.1ms~3600s
BUC5IB-2000M	20M/IMX183(M) 1 "(13.056x8.755)	2.4 x2.4	388mv with 1/30s 0.21mv with 1/30s	17.8@5440x3648 41@4096x2160	1x1, 1x1,	0.1ms~3600s

			(F8.0)	51@2736x1824 64@1824x1216	2x2, 3x3	
BUC5IB-1600C	16M/MN34230PLJ(C) 4/3" (17.6x13.3)	3.8x3.8	2413LSB 89.1LSB (Gain = 0dB)	6@4640x3506 20@2304x1750 48@1536x1160	1x1 2x2 3x3	0.15ms~3600s
BUC5IB-1600M	16M/MN34230ALJ(M) 4/3" (17.6x13.3)	3.8x3.8	2650LSB 89.1LSB (Gain = 0dB)	22.5@4648x3506 43.0@2304x1750 48.0@1536x1168	1x1 2x2 3x3	0.15ms~3600s
BUC5IB-1030C	10.3M/IMX294(C) 4/3 "(17.47x12.86)	4.63 x4.63	419mv with 1/30s 0.12mv with 1/30s	7.5@3704x2778 8.5@4096x2160 30@2048x1080 60@1360x720	1x1, 1x1, 2x2, 3x3	0.15ms~3600s
BUC5IB-1030M	10.3M/IMX492(M) 4/3 "(19.11x13.0)	4.63 x4.63	701mv with 1/30s 0.12mv with 1/30s	33.3@4128*2808 8.0@ 8184*5616 69.5@2048*1080 96.2@1360*720	1x1 Quad* 2x2 3x3	0.1ms~3600s
BUC5IB-900C	9M/IMX533(C) 1"(11.28x11.28)	3.76 x3.76	534mv with 1/30s 0.1mv with 1/30s	20@2992x3000(14bit） 40@2992x3000 62@1488x1500 186@992x998	1x1 1x1 2x2 3x3	0.1ms~3600s
BUC5IB-830C	8.3M/IMX485(C) 1/1.2"(11.14x6.26)	2.9x2.9	2188mv with 1/30s 0.15mv with 1/30s	43@3840x2160 66@1920x1080	1x1 2x2	0.1ms~3600s
BUC5IB-700C	7.0M/IMX428(C, G) 1.1 "(14.4x9.9)	4.5 x4.5	2058mv with 1/30s 0.15mv with 1/30s	12@3200x2200 33@1600x1100	1x1 1x1	0.1ms~3600s
BUC5IB-700M	7.0M/IMX428(M, G) 1.1 "(14.4x9.9)	4.5 x4.5	3354mv with 1/30s 0.15mv with 1/30s	51@3200x2200 133@1600x1100	1x1 2x2	0.1ms~3600s
BUC5IB-170C	1.7M/IMX432(C, G) 1.1 "(14.4x9.9)	9.0 x9.0	4910mv with 1/30s 0.3mv with 1/30s	33@1600x1100	1x1	0.1ms~3600s
BUC5IB-170M	1.7M/IMX432(M, G) 1.1 "(14.4x9.9)	9.0 x9.0	8100mv with 1/30s 0.3mv with 1/30s	94@1600x1100	1x1	0.1ms~3600s

C:Color; M:Monochrome; G: Global shutter

| Other Specification for BUC5IB 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™ 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*	Two-stage TE-cooling System -45 °C below Camera Body Temperature

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 External Power Adapter for Cooling System, DC12V, 3A
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: USB3.0 High-speed Port
	Display: 17" or Larger
	CD-ROM

Dimension

The BUC5IB body, made from tough, alloy with CNC technique, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT or AR to block the IR light or protect the camera sensor. The fan's vibration is minimized to the low level to eliminate the vibration caused imaging blur. This design ensures a rugged, robust solution with an increased lifespan when compared to the other industrial camera solutions.

Dimension of BUC5IB (Cylindrical housing)
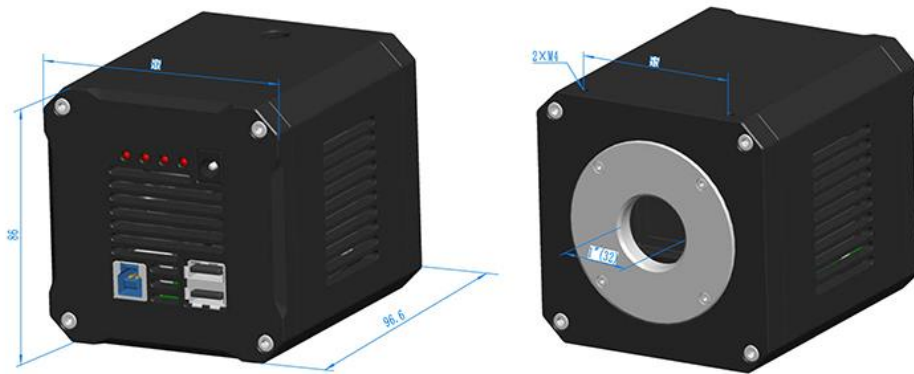
Dimension of BUC5IB (Cuboid housing)

Packing Information for BUC5IB Cameras

Packing Information of BUC5IB Camera(Cylindrical housing)

Packing Information of BUC5IB Camera(Cuboid housing)

Standard Package	
A	Carton L:50cm W:30cm H:30cm (20pcs, 12~17Kg/ carton), not shown in the photo (TBD)
B	3-A safety equipment case: L:28cm W:23cm H:15cm (1pcs, 2.8Kg/ box); Carton size: L:28.2cm W:25.2cm H:16.7cm (TBD)
C	BUC5IB camera(C-mount)
D	Drying tube and desiccant
E	Power adapter: input: AC 100~240V 50Hz/60Hz, output: DC12 V 3A
F	High-Speed USB3.0 A male to B male gold-plated connectors cable /1.5m
G	CD (Driver & utilities software, Ø12cm)

Optional Accessory			
H	Adjustable lens adapter	C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	BCN2A-0.37× BCN2A-0.5× BCN2A-0.75× BCN2A-1×
		C-Mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	BCN3A-0.37× BCN3A-0.5× BCN3A-0.75× BCN3A-1×
I	Fixed lens Adapter	C-mount to Dia.23.2mm eyepiece tube (Please choose 1 of them for your microscope)	BCN2F-0.37× BCN2F-0.5× BCN2F-0.75× BCN2F-1×
		C-mount to Dia.31.75mm eyepiece tube (Please choose 1 of them for your telescope)	BCN3F-0.37× BCN3F-0.5×

			BCN3F-0.75×
			BCN3F-1×
	Note: For H and I 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.		
J	(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube		
K	(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube		
L	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.)	

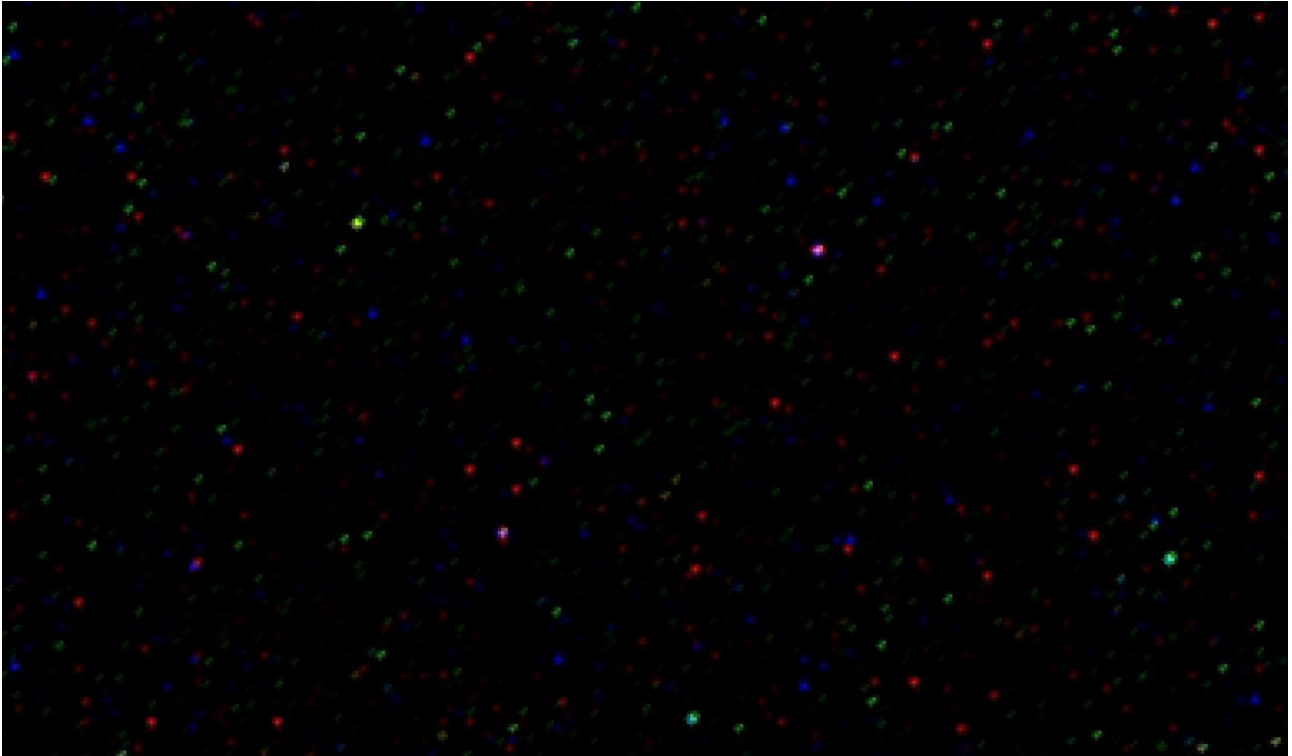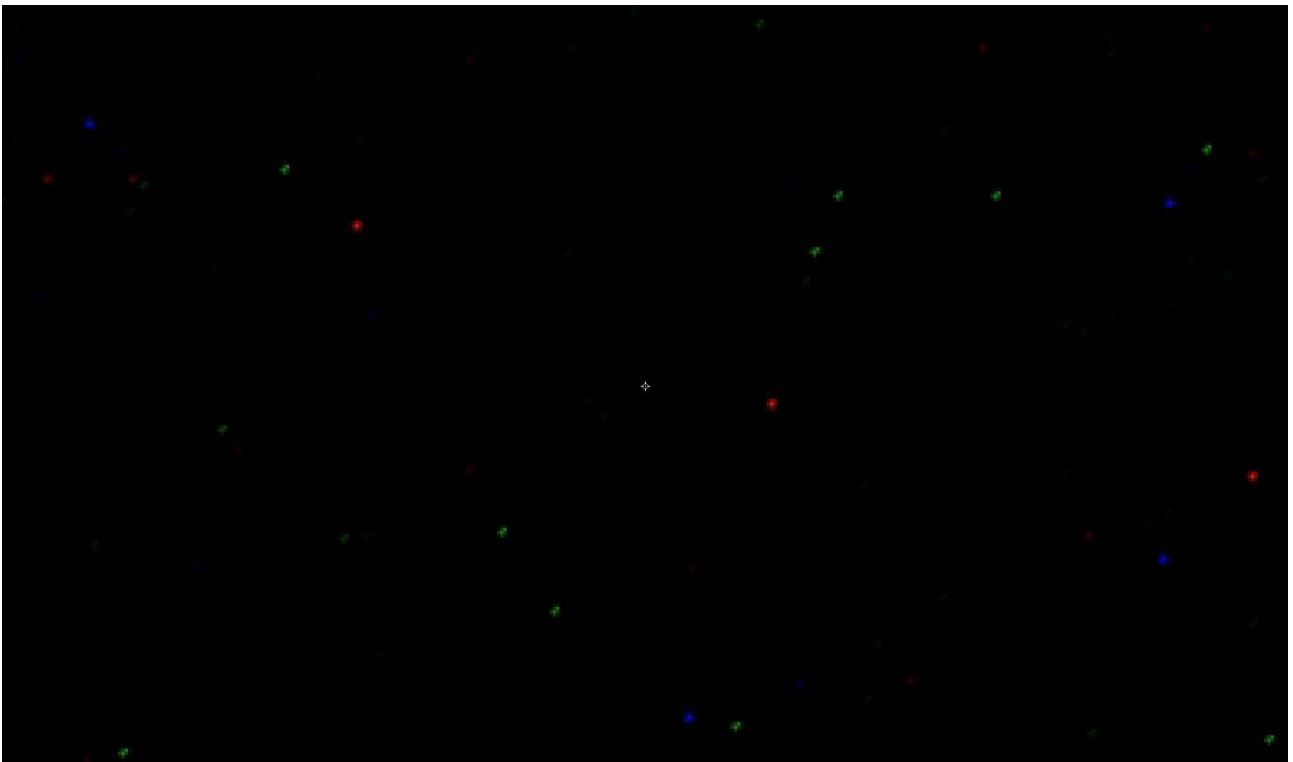## Extension of BUC5IB with Microscope Adapter
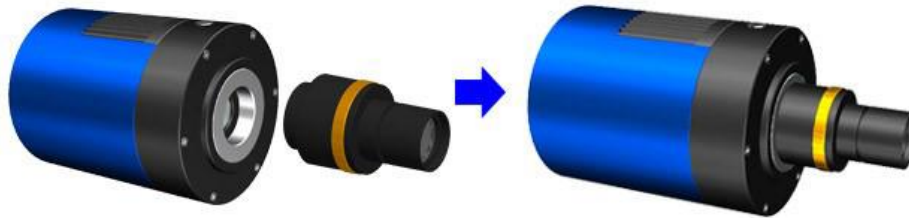
BUC5IB+ BCN2A-XXX(23.2mm Adapter)
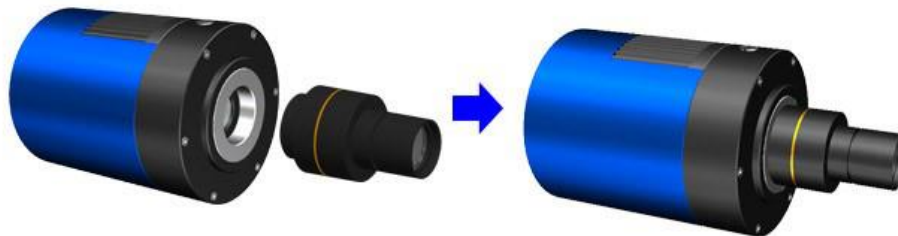
BUC5IB+ BCN2F-XXX(23.2mm Adapter)

Sample Image

Hot noise for the BUC5IB-1600C at Gain 20 , 600 seconds, 15 Centidegree

Hot noise for the BUC5IB-1600C Gain 20, 600 seconds, minus 15 Centidegree