

## BUC6B Series TE-Cooling C-mount USB3.0 CCD Camera



### Introduction

BUC6B series cameras adopt Sony Exview HAD CCD II sensor as the image capture device with two-stage peltier cooling sensor chip to -40 degree below ambient temperature.

The cooling temperature can be controlled by software to ensure that the photoelectric conversion quantum efficiency is as high as possible. 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.

USB3.0 is used as the data transfer interface to increase the frame rate.

BUC6B 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 BUC6B can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy deep sky application.

### Features

The basic characteristic of BUC6B can be summarized as follows:

1. Standard C-Mount camera with SONY ExView HAD CCD II sensors from 1.4M to 12M;
2. Two-stage TE-cooling with controllable electric fan;
3. Sensor chip cooling up to 40°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™ 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.

## Application

The BUC6B series USB3.0 cooled CCD digital cameras can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy applications as following:

1. Bright field microscope;
2. Dark field, differential interference (DIC) microscope;
3. live cell imaging, cell or histopathological examination, cytology;
4. Defect analysis, semiconductor inspection, precision measurement;
5. Weak light fluorescence imaging, GFP or RFP analysis, fluorescence in situ hybridization (FISH);
6. Resonance fluorescence transfer microscope, total internal reflection fluorescence microscope, real - time confocal microscopy, failure analysis, astronomy photography.

## Specification

Order Code	Sensor & Size(mm)	Pixel(μm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure
<b>BUC6B-1200C</b>	12M/ICX834AQG(C) 1" (13.15x8.77)	3.1x3.1	420mv with 1/30s 15.2mv with 1/30s	3.6@4248x2836 3.6@2124x1418	1x1, 2x2	0.06ms~1h
<b>BUC6B-1200M</b>	12M/ICX834ALG(M) 1" (13.15x8.77)	3.1x3.1	420mv with 1/30s 12mv with 1/30s (F8.0)	3.6@4248x2836 3.6@2124x1418	1x1, 2x2	0.06ms~1h
<b>BUC6B-900C</b>	9.0M/ICX814AQG(C) 1" (12.47x9.98)	3.69x3.69	580mv with 1/30s 12mv with 1/30s	4.4@3388x2712 4.4@1694x1356	1x1, 2x2	0.06ms~1h
<b>BUC6B-900M</b>	9.0M/ICX814ALG(M) 1" (12.47x9.98)	3.69x3.69	660mv with 1/30s 12mv with 1/30s (F8.0)	4.4@3388x2712 4.4@1694x1356	1x1, 2x2	0.06ms~1h
<b>BUC6B-600C</b>	6.0M/ICX694AQG(C) 1" (12.48x9.99)	4.54x4.54	880mv with 1/30s 8mv with 1/30s	7.5@2748x2200 14@2748x1092	1x1	0.06ms~1h
<b>BUC6B-600M</b>	6.0M/ICX694ALG(M)	4.54x4.54	1000mv with 1/30s	7.5@2748x2200	1x1	0.06ms~1h

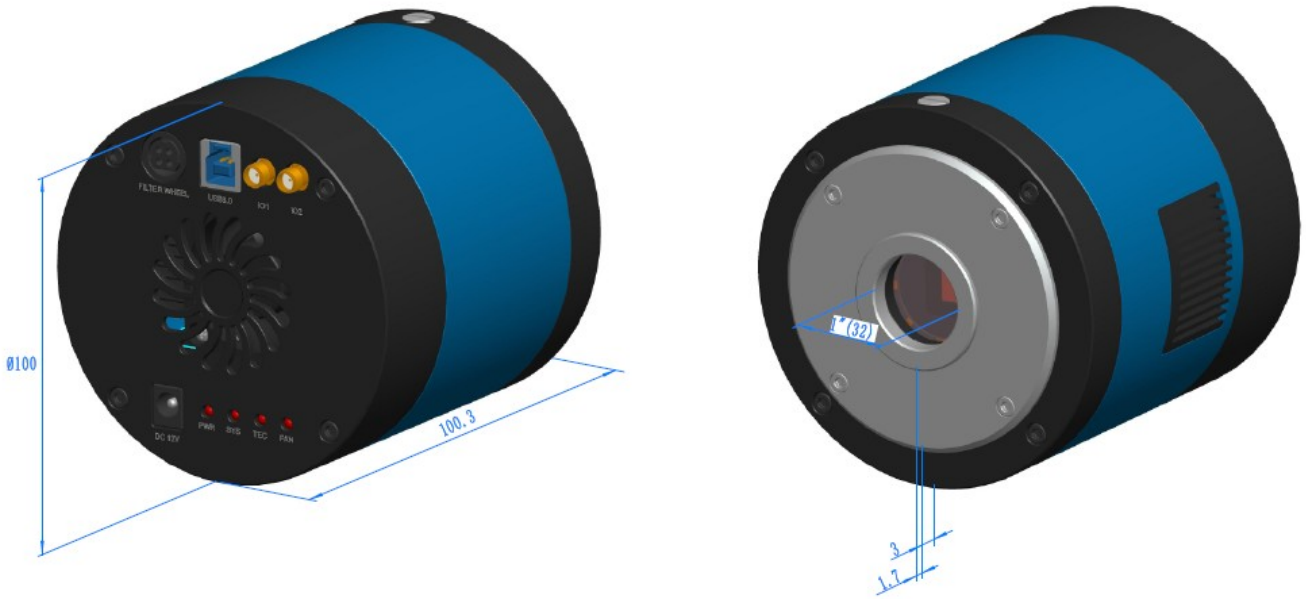
	1" (12.48x9.99)		8mv with 1/30s	14@2748x1092		
<b>BUC6B-280C</b>	2.8M/ICX674AQC(C) 2/3" (8.81x6.63)	4.54x4.54	800mv with 1/30s 4mv with 1/30s	15@1938x1460 17@1610x1212 18@1930x1092	1x1	0.05ms~1h
<b>BUC6B-280M</b>	2.8M/ICX674ALG(M) 2/3" (8.81x6.63)	4.54x4.54	950mv with 1/30s 4mv with 1/30s	15@1938x1460 17@1610x1212 18@1930x1092	1x1	0.05ms~1h
<b>BUC6B-140C</b>	1.4M/ICX285AQ(C) 2/3" (8.88x6.70)	6.45x6.45	1240mv with 1/30s 10mv with 1/30s	15@1360x1024	1x1	0.07ms~1h
<b>BUC6B-140M</b>	1.4M/ICX285AL(M) 2/3" (8.88x6.70)	6.45x6.45	1300mv with 1/30s 11mv with 1/30s	15@1360x1024	1x1	0.07ms~1h
<b>BUC6B-140BC</b>	1.4M/ICX825AQA(C) 2/3" (8.88x6.70)	6.45x6.45	2000mv with 1/30s 4.8mv with 1/30s	25@1376x1040	1x1	0.07ms~1h
<b>BUC6B-140BM</b>	1.4M/ICX825ALA(M) 2/3" (8.88x6.70)	6.45x6.45	2000mv with 1/30s 4.8mv with 1/30s	25@1376x1040	1x1	0.07ms~1h

C:Color; M:Monochrome.

<b>Other Specification for BUC6B Cameras</b>	
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 API	Native C/C++, C#/VB.NET, DirectShow, Twain and Labview
Recording System	Still Picture and Movie
Cooling System	Two-stage TE-cooling System -45 °C below Camera Body Temperature
<b>Operating Environment</b>	
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 External Power Adapter for Cooling System, DC12V, 3A
<b>Software Environment</b>	
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

## Dimension of BUC6B

The BUC6B 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. These measures ensure a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions.



Dimension of BUC6B

## Packing Information for BUC6B



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Standard Package

A	Carton L:50cm W:30cm H:30cm (20pcs, 12~17Kg/ carton), not shown in the photo	
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	
C	BUC6B camera(C-mount)	
D	Power adapter: input: AC 100~240V 50Hz/60Hz, ouut: DC12 V 3A	
E	High-Speed USB3.0 A male to B male gold-plated connectors cable /2.0m	
F	CD (Driver & utilities software, Ø12cm)	
<b>Optional Accessory</b>		
G	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)
H	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)
<b>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.</b>		
I	108015(Dia.23.2mm to 30.0mm Ring)/Adapter rings for 30mm eyepiece tube	
J	108016(Dia.23.2mm to 30.5mm Ring)/ Adapter rings for 30.5mm eyepiece tube	
K	External trigger control line	
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.)