

BUC5IC Series TE-Cooling M52/C-mount USB3.0 CMOS Camera





BUC5IC Series (Square Housing)

BUC5IC series camera adopts SONY Exmor or GSENSE with big pixel size or full-frame 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 -40°C 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.

BUC5IC series comes 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 BUC5IC series can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy deep sky application.

The Basic Characteristic of BUC5IC Series

The basic characteristic of **BUC5IC** series can be summarized as follows:

- 1. Standard camera with SONY Exmor or GSENSE CMOS sensors;
- 2. Big pixels or full-frame sensor size;
- 3. Two-stage TE-cooling with controllable electric fan;
- 4. Sensor chip cooling up to-40°C below ambient temperature;
- 5. Working temperature can be regulated to specified temperature in 5 minutes;
- 6. Smart structure to assure the heat radiation efficiency and avoid the moisture problem;
- 7. IR-CUT/AR coated windows (Optional);
- 8. M52 x0.75 or C-mount
- 9. USB3.0 5Gbit/second interface ensuring high speed data transmission;
- 10. Up to 1000 seconds long time exposure;
- 11. Embedded up to 16bit hardware ISP module;
- 12. Including 2-D denoising and sharpening
- 13. Ultra-Fine color engine with perfect color reproduction capability;
- 14. Support the capture of video and image in software / hardware trigger mode;
- 15. With advanced video & image processing application ImageView;
- 16. Support both video and trigger modes;



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

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

BUC5IC Series Datasheet

Order Code	Sensor & Size(mm)	Pixel(µm)	G Sensitivity Dark Signal	FPS/Resolution	Binning	Exposure	
BUC5IC-6200AM	61M/IMX455(M)	3.76x3.76	871mv with 1/30s 0.039mv with 1/30s 88.3dB/47.1dB	6.1@9568x6380(16bit)	1x1		
	2 7"(35 98x23 99)			19.1@4784x3190	2x2	0.1ms~1000s	
	Eull Frame			55.6@3184x2124	3x3		
	ruirruine			191@1040x706	9x9		
BUC5IC-6200AC		3.76x3.76	484.5mv with 1/30s 0.039mv with 1/30s 85.8dB/47.0dB	6.1@9568x6380(16bit)	1x1		
	2 7" (2E 08v22 00)			19.1@4784x3190	2x2	0.1ms~1000s	
	2.7 (35.98x23.99) Full Frame			55.6@3184x2124	3x3		
				191@1040x706	9x9		
BUC5IC-2400AC	24M/IMX410(C)	5.94x5.94	573mv with 1/30s	15.3@6064x4040(14bit)	1x1		
	2.7" (36.02x24.00)		0.037mv with 1/30s	41@3024x2012	2x2	0.1ms~1000s	
	Full Frame		87.3dB/50.2dB	114@2016x1342	3x3		
BUC5IC-400AM	4.2M/GSENSE2020e(M) 6.5x 6.5 1.2" (13.31x13.31)		8.1x107 (e-/((W/m2).s))				
		6.5x 6.5	Peak QE 64.2% @595nm	44.5@2048x2048	1x1	0.1ms~1000s	
			13(e-/s/pix)	44.5@1024 x 1022	2x2		
			66.6dB/46dB				
BUC5IC-400BM	4.2M/GSENSE2020BSI	6.5 x 6.5	1.1x108 (e-/((W/m2).s))				
			Peak QE 93.7% @550nm	43.5@2048 x2048	1x1	0.1ms~1000s	
	(IVI, UV)		80(e-/s/pix)	43.5@1024 x1024	2x2		
	1.2" (13.31x13.31)		65.8dB/47dB				
BUC5IC-400CM	4.2M/GSENSE400BSI (M, UV) 2.0" (22.53x22.53)	11 x 11	3.25x108 (e-/((W/m2).s))				
			Peak QE 95.3% @560nm	37@2048 x2048	1x1	0.1mc~1000c	
			345(e-/s/pix)	37@1024 x1024	2x2	0.11115 10005	
			68.5dB/50dB				

C: Color; M: Monochrome; UV: Ultra-violet sensitive

Other Specification for BUC5IC Series				
Constral Dance	200-1000nm (The spectral response range of each model is different. Please refer to the product			
Spectral Kange	manual of each model for detailed parameters)			
Protect Windows	IR CUT (AR protection glass is optional)			
White Balance	ROI White Balance/ Manual Temp Tint Adjustment/NA for Monochromatic Sensor			
Color Technique	Ultra-Fine Color Engine/NA for Monochromatic Sensor			
Canturo/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 (Free running mode or trigger mode)			
Cooling System*	Two-stage TE-cooling System -40 °C below Camera Body Temperature			
IO Interface	One optocoupler isolation input, one optocoupler isolation output, two direct connection GPIO			
Operating Environment				



Operating Temperature (in	-10~ 50		
Centidegree)			
Storage Temperature (in	-20~ 60		
Centidegree)			
Operating Humidity	30~80%RH		
Storage Humidity	10~60%RH		
Dawar Guarke	DC 5V over PC USB Port		
Power Supply	External Power Adapter for Cooling System, DC19V, 4A		
Software Environment			
	Microsoft [®] Windows [®] XP / Vista / 7 / 8 /10 /11 (32 & 64 bit)		
Operating System	OSx(Mac OS X)		
	Linux		
	CPU: Equal to Intel Core2 2.8GHz or Higher		
	Memory: 2GB or More		
PC Requirements	USB Port: USB3.0 High-speed Port		
	Display: 17" or Larger		
	CD-ROM		

Dimension of BUC5IC Series and Connection

The BUC5IC series 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.







Beijing BestScope Technology Co., Ltd.



Dimension of BUC5IC (Square) Series

ltem	Specification
1	M52F \times 0.75 thread
2	Protective window, 39 \times 27 \times 1.1mm, AR window for mono camera, IR-cut for color camera
3	Thermo outlet
4	Air inlet
5	Trigger (7 pin)
6	USB 3.0/ USB 2.0 port
7	DC 19V 4.74A power port, 5.5 $ imes$ 2.1mm
8	Power LED indicators
9	System LED TEC LED
10	TEC LED indicators
11	Fan LED indicators



Packing Information for BUC5IC Series



Packing Information of BUC5IC Series(Square)

Standard Package					
А	Carton L:50cm W:30cm H:30cm (20pcs, 12~17Kg/ carton), not shown in the photo (TBD)				
В	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)				
С	C One BUC5IC series camera				
D	Power adapter: input: AC 100~240V 50Hz/60Hz, output: DC19 V 4A				
Е	High-Speed USB3.0 A male to B male gold-plated connectors cable /1.5m				
F	F IO cable				
G	G CD (Driver & utilities software, Ø12cm)				
L		106011/TS-M1(X=0.01mm/100Div.);			
	Calibration kit	106012/TS-M2(X,Y=0.01mm/100Div.);			
		106013/TS-M7(X=0.01mm/100Div., 0.10mm/100Div.)			



Sample Images Captured with BUC5IC Series (TBD)



Hot noise for the BUC5IC at Gain 20 , 600 second, 15 Centidegree



Hot noise for the BUC5IC Gain 20 , 600 second, minus 15 Centidegree



5. USB3.0 CCD Digital Camera

(1) BUC6A Series C-mount USB3.0 CCD Camera





Introduction

BUC6A series USB3.0 CCD digital camera adopt Sony ExView HAD CCD sensor as the image capture device. Sony ExView HAD CCD is a CCD that drastically improves light efficiency by including near infrared light region as a basic structure of HAD (Hole-Accumulation-Diode) sensor. USB3.0 is used as the data transfer interface.

BUC6A series cameras" hardware resolutions range from 2.8M to 6M and come with the integrated CNC aluminum alloy compact housing.

BUC6A series cameras come with advanced video & image processing application ImageView; Providing Windows/Linux/ OSX multiple platforms SDK; Native C/C++, C#/VB.NET, DirectShow, Twain Control API.

The BUC6A series cameras can be widely used in bright field, dark field, fluorescent light environment and microscope image capture and analysis with higher frame rate.

Features

The BUC6A series cameras" characteristic is as follows:

- 1. Standard C-Mount camera with SONY ExView HAD CCD II sensors from 2.8M ~ 6M;
- 2. IR-CUT Coated Windows;
- 3. Up to 1000s long time exposure;
- 4. USB3.0 5Gbit/second interface ensuring high speed data transmission;
- 5. Ultra-Fine[™] color engine with perfect color reproduction capability;
- 6. With advanced video & image processing application ImageView;