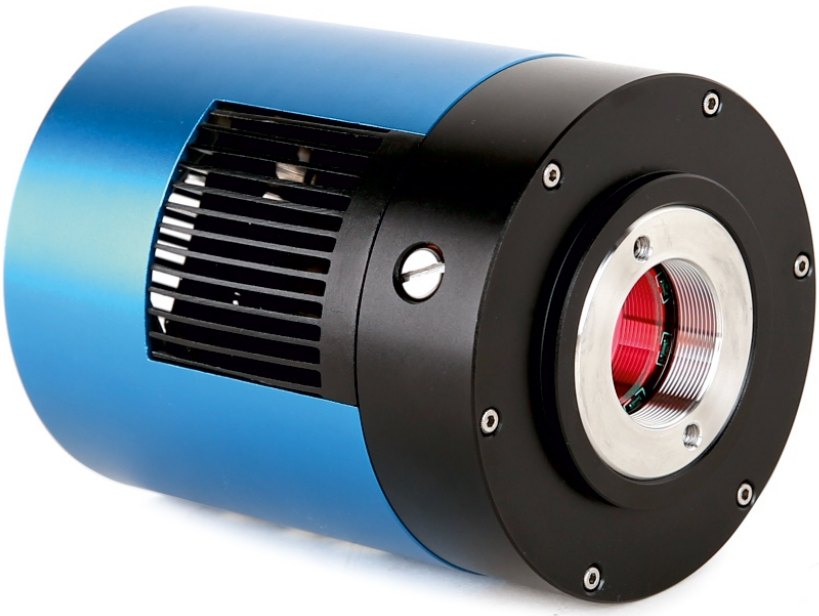
STALWART

Cooled C-mount USB3.0 CMOS Camera
STC5IB Series



STC5IB-Series

Introduction

STC5IB 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.
STC5IB 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 STC5IB 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

Features

- Standard C-Mount camera with SONY Exmor CMOS sensors from 1.7M to 20M;
- Two-stage TE-cooling with controllable electric fan;
- Sensor chip cooling up to 42°C below ambient temperature;
- Working temperature can be regulated to specified temperature in 5 minutes;
- Smart structure to assure the heat radiation efficiency and avoid the moisture problem;
- IR-CUT/AR coated windows;
- Up to 1 hour long time exposure;
- USB3.0 5Gbit/second interface ensuring high speed data transmission;
- Ultra-FineTM color engine with perfect color reproduction capability;
- With advanced video & image processing application Image View;
- Support both video and trigger modes;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.NET, DirectShow, Twain control API.

Specification

Item	STC5IB-2100C	STC5IB-2000C	STC5IB-2000M	STC5IB-1600C
Sensor & Size(mm)	21M/IMX269© 4/3 “(17.4x13.1)	20M/IMX183© 1 “(13.056x8.755)	20M/IMX183(M) 1 “(13.056x8.755)	16M/MN34230PLJ © 4/3“ (17.6x13.3)
Pixel(μm)	3.3 x3.3	2.4 x2.4	2.4 x2.4	3.8x3.8
G Sensitivity Dark Signal	400mv with 1/30s 0.1mv with 1/30s	462mv with 1/30s 0.21mv with 1/30s	388mv with 1/30s 0.21mv with 1/30s (F8.0)	2413LSB 89.1LSB (Gain = 0dB)
FPS/Resolution	5@5280x3956 6@3952x3952 15@2640x1978 50@1760x1318 100@584x440	5@5440x3648 10@4096x2160 15@2736x1824 30@1824x1216	17.8@5440x3648 41@4096x2160 51@2736x1824 64@1824x1216	6@4640x3506 20@2304x1750 48@1536x1160
Binning	1x1 1x1 2x2 3x3 9x9	1x1, 1x1, 2x2, 3x3	1x1, 1x1, 2x2, 3x3	1x1 2x2 3x3
Exposure	0.1ms~3600s	0.1ms~3600s	0.1ms~3600s	0.15ms~3600s

Specification

Item	STC5IB-1600M	STC5IB-1030C	STC5IB-700C	STC5IB-700M
Sensor & Size(mm)	16M/MN34230ALJ (M) 4/3“ (17.6x13.3)	10.3M/IMX294© 4/3 “(17.47x12.86)	7.0M/IMX428©, G) 1.1 “(14.4x9.9)	7.0M/IMX428(M, G) 1.1 “(14.4x9.9)
Pixel(μm)	3.8x3.8	4.63 x4.63	4.5 x4.5	4.5 x4.5
G Sensitivity Dark Signal	2650LSB 89.1LSB (Gain = 0dB)	419mv with 1/30s 0.12mv with 1/30s	2058mv with 1/30s 0.15mv with 1/30s	3354mv with 1/30s 0.15mv with 1/30s
FPS/Resolution	22.5@4648x3506 43.0@2304x1750 48.0@1536x1168	7.5@3704x2778 8.5@4096x2160 30@2048x1080 60@1360x720	12@3200x2200 33@1600x1100	51@3200x2200 133@1600x1100
Binning	1x1 2x2 3x3	1x1, 1x1, 2x2, 3x3	1x1 1x1	1x1 2x2
Exposure	0.15ms~3600s	0.15ms~3600s	0.1ms~3600s	0.1ms~3600s

Specification

Item	STC5IB-170C	STC5IB-170M
Sensor & Size(mm)	1.7M/IMX432©, G) 1.1 “(14.4x9.9)	1.7M/IMX432(M, G) 1.1 “(14.4x9.9)
Pixel(μm)	9.0 x9.0	9.0 x9.0
G Sensitivity Dark Signal	4910mv with 1/30s 0.3mv with 1/30s	8100mv with 1/30s 0.3mv with 1/30s
FPS/Resolution	33@1600x1100	94@1600x1100
Binning	1x1	1x1
Exposure	0.1ms~3600s	0.1ms~3600s

Other Specification for STC5IB 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-FineTM 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

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
	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 STC5IB 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.