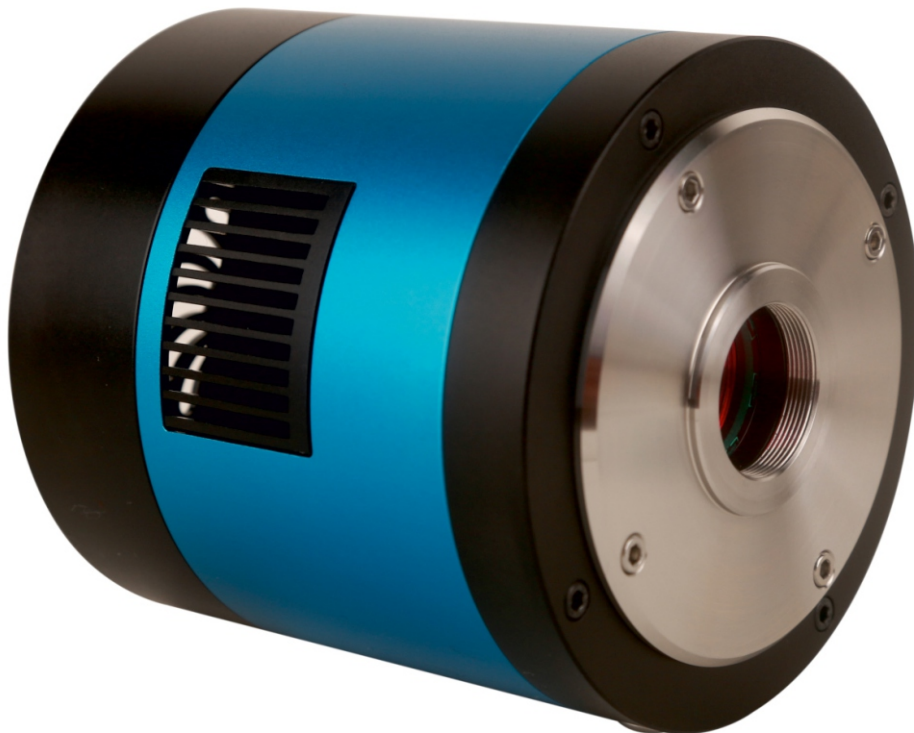


# STALWART

## C-mount CCD Color Digital Camera STC6B Series



STC6B-Series

## Introduction

STC6B 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.

STC6B 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 STC6B can be widely used in low light environment and microscope fluorescence image capture and analysis, as well as the astronomy deep sky application.

## Features

- Standard C-Mount camera with SONY ExView HAD CCD II sensors from 1.4M to 12M;
- Two-stage TE-cooling with controllable electric fan;
- Sensor chip cooling up to 40°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-Fine™ color engine with perfect color reproduction capability;
- With advanced video & image processing application ImageView;
- 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	STC6B-1200C	STC6B-1200M	STC6B-900C	STC6B-900M
Sensor & Size(mm)	12M/ICX834AQG© 1" (13.15x8.77)	12M/ICX834ALG (M) 1" (13.15x8.77)	9.0M/ICX814AQG © 1" (12.47x9.98)	9.0M/ICX814ALG (M) 1" (12.47x9.98)
Pixel(μm)	3.1x3.1	3.1x3.1	3.69x3.69	3.69x3.69
G Sensitivity Dark Signal	420mv with 1/30s 15.2mv with 1/30s	420mv with 1/30s 12mv with 1/30s (F8.0)	580mv with 1/30s 12mv with 1/30s	660mv with 1/30s 12mv with 1/30s (F8.0)
FPS/Resolution	3.6@4248x2836 3.6@2124x1418	3.6@4248x2836 3.6@2124x1418	4.4@3388x2712 4.4@1694x1356	4.4@3388x2712 4.4@1694x1356
Binning	1x1, 2x2	1x1, 2x2	1x1, 2x2	1x1, 2x2
Exposure	0.06ms~1h	0.06ms~1h	0.06ms~1h	0.06ms~1h

## Specification

Item	STC6B-600C	STC6B-600M	STC6B-280C	STC6B-280M
Sensor & Size(mm)	6.0M/ICX694AQG© 1" (12.48x9.99)	6.0M/ICX694ALG (M)1" (12.48x9.99)	2.8M/ICX674AQG © 2/3" (8.81x6.63)	2.8M/ICX674ALG (M) 2/3" (8.81x6.63)
Pixel(μm)	4.54x4.54	4.54x4.54	4.54x4.54	4.54x4.54
G Sensitivity	880mv with 1/30s	1000mv with 1/30s	800mv with 1/30s	950mv with 1/30s
Dark Signal	8mv with 1/30s	8mv with 1/30s	4mv with 1/30s	4mv with 1/30s
FPS/Resolution	7.5@2748x2200 14@2748x1092	7.5@2748x2200 14@2748x1092	15@1938x1460 17@1610x1212 18@1930x1092	15@1938x1460 17@1610x1212 18@1930x1092
Binning	1x1	1x1	1x1	1x1
Exposure	0.06ms~1h	0.06ms~1h	0.05ms~1h	0.05ms~1h

## Specification

Item	STC6B-140C	STC6B-140M	STC6B-140BC	STC6B-140BM
Sensor & Size(mm)	1.4M/ICX285AQ© 2/3" (8.88x6.70)	1.4M/ICX285AL(M) 2/3" (8.88x6.70)	1.4M/ICX825AQA © 2/3" (8.88x6.70)	1.4M/ICX825ALA (M) 2/3" (8.88x6.70)
Pixel(μm)	6.45x6.45	6.45x6.45	6.45x6.45	6.45x6.45
G Sensitivity	1240mv with 1/30s	1300mv with 1/30s	2000mv with 1/30s	2000mv with 1/30s
Dark Signal	10mv with 1/30s	11mv with 1/30s	4.8mv with 1/30s	4.8mv with 1/30s
FPS/Resolution	15@1360x1024	15@1360x1024	25@1376x1040	25@1376x1040
Binning	1x1	1x1	1x1	1x1
Exposure	0.07ms~1h	0.07ms~1h	0.07ms~1h	0.07ms~1h

## Other Specification for STC6B 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-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

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:USB2.0 High-speed Port
	Display:17" or Larger
	CD-ROM

## Dimension

The STC6B 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.

## Application

The STC6B 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:

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