

# STALWART

## C-mount CMOS Color Digital Camera STC5D Series



STC5D-Series

## Introduction

STC5D series cameras are ultra-high performance USB3.0 CMOS cameras and they adopt ultra-high performance CMOS sensor as the image capture device and USB3.0 is used as the data transfer interface. STC5D hardware resolutions range from 3.0M to 14M and come with the integrated zinc aluminum alloy compact housing.

STC5D comes 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 STC5D can be widely used in bright field light environment and microscope image capture and analysis with higher frame rate.

## Features

- Standard C-Mount camera with Aptina CMOS sensor;
- With hardware resolution from 3.0MP to 18MP;
- Integrated zinc aluminum alloy housing;
- USB3.0 5 Gbps interface ensuring high frame rate;
- With advanced video & image processing application ImageView;
- Providing Windows/Linux/Mac OS multiple platforms SDK;
- Native C/C++, C#/VB.NET, DirectShow, Twain Control API.

## Specification

| Item              | STC5D-1800C                                      | STC5D-1600C                                       | STC5D-1601C                                       | STC5D-1601M                                                                  |
|-------------------|--------------------------------------------------|---------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------|
| Sensor & Size(mm) | 18M/AR1820<br>1/2.3"(6.14x4.61)                  | 16M/MN34120<br>1/2.33"(6.18x4.66)                 | 16M/MN34230PLJ<br>© 4/3" (17.6x13.3)              | 16M/MN34230ALJ<br>(M) 4/3" (17.6x13.3)                                       |
| Pixel(μm)         | 1.25x1.25                                        | 1.335x1.335                                       | 3.8x3.8                                           | 3.8x3.8                                                                      |
| G Responsivity    | 0.62 V/lux-sec                                   | R: 2453LSB                                        | R: 1315LSB                                        | A: 2650LSB                                                                   |
| Dynamic range     | 65.8dB36.3dB                                     | Gr: 2444LSB                                       | Gr: 2413LSB                                       | B: 2650LSB                                                                   |
| SNRmax            |                                                  | Gb: 1054LSB<br>B: 996LSB                          | Gb: 2413LSB<br>B: 1042LSB<br>(Gain = 0dB)         | C: 2650LSB<br>D: 2650LSB<br>(Gain = 0dB)                                     |
| FPS/Resolution    | 5.6@4912x3684<br>18.1@2456x1842<br>32.2@1228x922 | 6.0@4632x3488<br>15.0@2320x1740<br>26.0@1536x1160 | 6.0@4648x3506<br>15.0@2304x1750<br>30.0@1536x1168 | 22@4640x3506<br>36@3840x2160<br>43@2304x1750<br>43@1920x1080<br>49@1536x1168 |
| Binning           | 1x1,2x2,4x4                                      | 1x1, 2x2,3x3                                      | 1x1,2x2,3x3                                       | 1x1, 1x1, 2x2, 2x2,<br>3x3                                                   |
| Exposure          | 0.1ms~2000ms                                     | 0.2ms~2000ms                                      | 0.06ms~15s                                        | 0.224ms~15s                                                                  |

## Specification

| Item              | STC5D-1400C                                      | STC5D-1000C                       | STC5D-850C                         | STC5D-500C                                       |
|-------------------|--------------------------------------------------|-----------------------------------|------------------------------------|--------------------------------------------------|
| Sensor & Size(mm) | 14M/MT9F002©<br>1/2.3“(5.73x4.60)                | 10M/MT9J003©<br>1/2.3“(5.98x4.58) | 8.5M/Special©<br>1/2.4“(5.56x4.26) | 5.1M/MT9P006©<br>1/2.5“(5.7x4.28)                |
| Pixel(μm)         | 1.4x1.4                                          | 1.67x1.67                         | 1.67x1.67                          | 2.2x2.2                                          |
| G Responsivity    | 0.724v/lux-sec                                   | 0.31v/lux-sec                     | 0.31v/lux-sec                      | 1.76v/lux-sec                                    |
| Dynamic range     | 65.3dB 35.5dB                                    | 65.2dB 34dB                       | 65.2dB 34dB                        | 67.74dB 38.5dB                                   |
| SNRmax            |                                                  |                                   |                                    |                                                  |
| FPS/Resolution    | 6.2@4096x3286<br>20.8@2048x1644<br>53.3@1024x822 | 7.2@3584x2746<br>24.5@1792x1372   | 8.3@3328x2548<br>26.2@1664x1272    | 14.2@2560x1922<br>38.3@1280x960<br>101.2@640x480 |
| Binning           | 1x1,2x2,4x4                                      | 1x1,2x2,4x4                       | 1x1,2x2,4x4                        | 1x1,2x2,4x4                                      |
| Exposure          | 0.224ms~2000ms                                   | 0.4ms~2000ms                      | 0.1ms~2000ms                       | 0.1ms~2000ms                                     |

## Specification

| Item                                | STC5D-300C                   |
|-------------------------------------|------------------------------|
| Sensor & Size(mm)                   | 3.1M/AR0330© 1/3“(4.51x3.38) |
| Pixel(μm)                           | 2.2x2.2                      |
| G Responsivity Dynamic range SNRmax | 1.9v/lux-sec 100dB 39dB      |
| FPS/Resolution                      | 27.3@2048x1534 53.3@1024x770 |
| Binning                             | 1x1, 2x2                     |
| Exposure                            | 0.1ms~2000ms                 |

## Other Specification for STC5D 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      | Natural                                                                    |

## 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 |

## 

|                  |                                                                                    |
|------------------|------------------------------------------------------------------------------------|
| Operating System | Microsoft® Windows® XP / Vista / 7 / 8 /10 (32 & 64 bit)<br>OSx(Mac OS X)<br>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 STC5D series body, made from tough, zinc alloy, ensures a heavy duty, workhorse solution. The camera is designed with a high quality IR-CUT to protect the camera sensor. No moving parts included. These measures ensure a rugged, robust solution with an increased lifespan when compared to other industrial camera solutions.