

High-Resolution CCD Cameras with External Trigger

Features

- 1024 x 768 or 1280 x 1024 Pixel Resolution
- Color and B&W Versions Available
- 30 fps or 15 fps (Full Frame Mode)
- Removable Filter Included
- For C-Mount Objectives
- Global Shutter
- Universal Trigger Input via a 9-Pin, D-Sub Connector



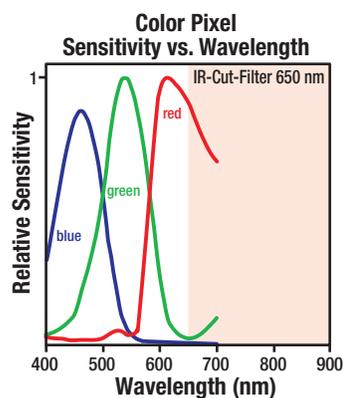
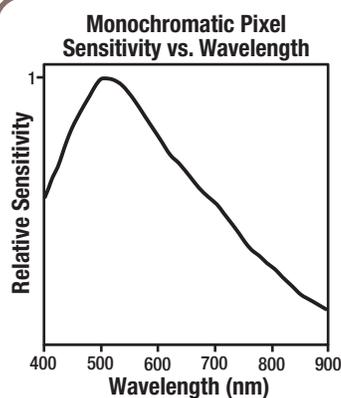
DCU223C

ITEM #	DCU223M	DCU223C	DCU224M	DCU224C
Pixel Resolution	1024 x 768		1280 x 1024	
Optical Sensor Class	1/3", B&W	1/3", Color	1/2", B&W	1/2", Color
Sensor Model (Sony)	ICX204AL	ICX204AK	ICX205AL	ICX205AK
Pixel Size	4.65 μ m x 4.65 μ m			
Exposure Mode	Electronic Global Shutter			
Read Out Mode	Progressive Scan			
Frame Rate (Free Run)	30 fps		15 fps	
Binning	Vertical			
ROI (Partial Scan)	Horizontal and Vertical			
Pixel Clock Frequency Range	5 – 30 MHz			
Exposure Time (Free Run)	66 μ s – 1040 ms		80 μ s – 1460 ms	
Gain	Master	RGB + Master	Master	RGB + Master
Hardware Trigger	Asynchronous			
Objective Connector	C-Mount (SM1 Adapters Included)			
Window (Removable)	Glass Filter	IR Filter	Glass Filter	IR Filter
Interface	USB 2.0			
Power Supply	<1.5 W, via USB			
Operating Temperature	0 to 50 °C (32 to 122 °F)			
Security Labels	CE, FCC, Class B			
Dimensions (W x H x D)	32.0 mm x 40.5 mm x 49.0 mm (1.26" x 1.59" x 1.93")			
Weight	96 g (0.21 lbs)			

These ultra compact, lightweight CCD cameras are an excellent choice for a wide range of applications including industrial automation, quality control, medical imaging, microscopy, and security technology. Each DCU223 model is equipped with a high-quality 1/3" CCD sensor with XGA resolution (1024 x 768) and provides a full frame rate of 30 fps, while each DCU224 model has a 1/2" CCD sensor with SXGA resolution (1280 x 1024) and provides a full frame rate of 15 fps. All cameras feature a USB 2.0 interface.

For all models, higher frame rates can be achieved by using the Region of Interest (ROI) or binning functions; the former increases the frame rate by only reading a selected area of the sensor, whereas the latter increases the frame rate by combining pixel readings before transferring them to the PC. Using the binning feature will compromise image quality.

The C-Mount threads (1.00"-32) of the CCD camera can be easily connected to components with Thorlabs' standard SM1 thread (1.035"-40) via one of the two included SM1 adapters. Standard drivers such as Direct Show (WDM), ActiveX®, TWAIN, and interfaces for popular machine vision software are provided. Over 20 demonstration programs (including source code) are supplied with these cameras. Windows and Linux drivers in addition to an SDK (C++, C#, VB, and LabVIEW support) are available.



situations. Even though only one third of the color information is obtained at each pixel, a full color image can be achieved through the use of various demosaicing algorithms that interpolate a set of red, green, and blue values at each point.

Pixel sensitivity versus wavelength plots are shown to the left for the monochromatic and color versions of these CCD cameras. The color models incorporate a removable IR filter that blocks the spectral region shown in pink. For these models, the popular Bayer color filter array is used to acquire digital color images. The filter is based on the repeating 2 x 2 pattern; half of the total number of pixels are green (G), and the remaining pixels are equally divided between red (R) and blue (B). Due to this arrangement, each pixel is only sensitive to one color, and as a result, the overall sensitivity of the color image is three times lower than that achievable with a monochromatic sensor. Thus, B&W CCD cameras are preferred in low-light

ITEM #	\$	£	€	RMB	DESCRIPTION
DCU223M	\$ 1,570.00	£ 1,130.40	€ 1,365.90	¥ 12,512.90	1024 x 768 px, 30 fps, 1/3" Sensor, Black and White CCD Camera
DCU223C	\$ 1,570.00	£ 1,130.40	€ 1,365.90	¥ 12,512.90	1024 x 768 px, 30 fps, 1/3" Sensor, Color CCD Camera
DCU224M	\$ 2,184.00	£ 1,572.48	€ 1,900.08	¥ 17,406.48	1280 x 1024 px, 15 fps, 1/2" Sensor, Black and White CCD Camera
DCU224C	\$ 2,184.00	£ 1,572.48	€ 1,900.08	¥ 17,406.48	1280 x 1024 px, 15 fps, 1/2" Sensor, Color CCD Camera