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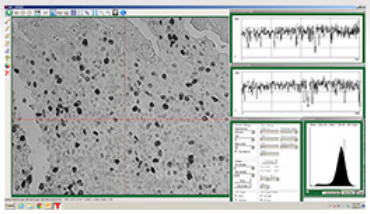
Find the *ThorLabs DCU224C* at our website: ***Click HERE***

High-Resolution USB CCD Cameras

- Pixel Resolution of 1024 x 768 or 1280 x 1024
- 30 fps or 15 fps Models Available
- USB 2.0 Interface



DCU223M



GUI and Software Package Included



Related Items
sCMOS Cameras
C-Mount Camera Lenses
Scientific-Grade Cameras
CMOS Cameras

Overview | Specs | Pixel Sensitivity | Software | Feedback

Features

- 1024 x 768 or 1280 x 1024 Pixel Color and B&W Versions Available
- 1/3" or 1/2" Image Sensor with Square Pixels
- Choose from 30 fps or 15 fps (Full Frame Mode)
- C-Mount Lens Mount for use with our Standard C-Mount Camera Lenses and High-Magnification Zoom Lenses
- Global Shutter
- Universal Trigger Input
- Software Support:
  - ThorCam GUI with 32- and 64-Bit Windows® 7, 8.1, or 10 Support
  - Included SDK Supports C++, C#, VB, and LabVIEW
  - Compatible with µManager / ImageJ

Item #	DCU223	DCU224
Resolution	1024 x 768 Pixels	1280 x 1024 Pixels
Pixel Clock Range[a]	5-30 MHz	
Binning	Vertical[b]	
AOI	Horizontal, Vertical[b]	
Frame Rate at 320 x 240 Pixel (Cif)	78 fps	38 fps

a. The max possible pixel clock depends on the computer used.
b. Function increases the frame rate.

Sensors and Functionality
These ultra compact, lightweight CCD cameras feature USB connections, making them extremely versatile for a wide range of applications including industrial automation, quality control, medical imaging, microscopy, and security technology. The DCU223 models are equipped with a high-quality SONY 1/3" CCD sensor with XGA resolution (1024 x 768) and provide a full frame repetition rate of 30 fps. The DCU224 models have a 1/2" CCD sensor with SXGA resolution (1280 x 1024) and provide a full frame repetition rate of 15 fps.

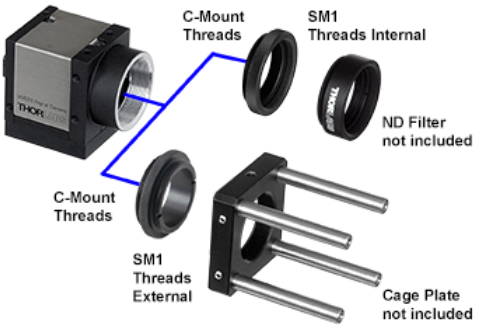
For all models, higher frame rates can be achieved by using the Area of Interest (AOI) or Binning functions; the former increases the frame rate by only reading a selected area of the sensor, whereas the latter increases the frame rate by combining pixel readings before transferring them to the PC, but in this case, image resolution is sacrificed. The computer can communicate digitally with the camera through the USB 2.0 interface, thus enabling the user to transmit images and control camera settings seamlessly.

Software
Each CCD camera comes with ThorCam, our Windows-compatible software package on CD. In addition, the cameras are supported by an extensive software development kit. Standard drivers like Direct Show (WDM), Active X, and TWAIN are provided. In addition, over 20 demo programs (including source code) are supplied. A USB cable for connecting the camera to a PC is also included.

Lenses
The DCU223 CCD cameras are fully compatible with our standard C-Mount Camera Lenses and High-Magnification Zoom Lenses, which are sold separately. Our standard lenses include fixed focal lengths of 3.5 mm - 75 mm with maximum apertures of up to f/0.95, as well as an 18 - 108 mm f/2.5 zoom lens. Our high-magnification zoom lenses are a modular system that features magnification from 0.07 - 28.

Included Mounting Adapters
Each CCD camera includes two thread adapters: one external C-Mount to internal SM1 (1.035"-40) and one external C-Mount to external SM1. The C-Mount threading of the CCD camera can be easily connected to components with Thorlabs' standard SM1 thread via one of the two included SM1 adapters, as shown in the photo to the right. Additional or replacement adapters may be purchased below. A mounting adapter plate is also provided with the CCD camera; by using the included M4 x 10 mm or 8-32 x 3/4" cap screw, the camera can be threaded onto Thorlabs' TR series Ø1/2" posts. Every unit also ships with four M3 x 6 mm screws for mounting the adapter plate to the camera.

SM1 Thread Compatibility



Compatibility of the CCD Camera with Thorlabs' SM1 Internal or External Threadings via the Included SM1 (1.035"-40) Adapters. Replacement adapters are shown below.

Trigger Option
The optional CAB-DCU-T1 and CAB-DCU-T2 cables can replace the standard USB connection while also enabling the use of the additional trigger input and output ports of these cameras. The exposure and readout/transfer events of the camera can be initiated via the input trigger; external events like strobe lights can be triggered by the camera through the output trigger. The trigger configuration, i.e. the source of the input trigger and the timing for the output trigger, can be set through the provided software or the LabVIEW drivers. Please click here for more details about the cables and the ordering information.

High-Resolution USB CCD Cameras

Based on your currency / country selection, your order will ship from Newton, New Jersey

+1	Qty	Docs	Part Number - Universal		Price	Available
+1			DCU223M	CCD Camera, 1024 x 768 Resolution, B&W, USB 2.0	$1,665.61	Today
+1			DCU223C	CCD Camera, 1024 x 768 Resolution, Color, USB 2.0	$1,665.61	Today

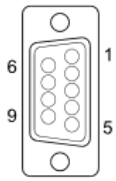
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+1	Qty	Docs	Part Number		Price	Available
+1			DCU224M	CCD Camera, 1280 x 1024 Resolution, B&W, USB 2.0	$2,317.01	Today
+1			DCU224C	CCD Camera, 1280 x 1024 Resolution, Color, USB 2.0	$2,317.01	Today

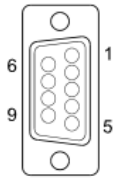
Add To Cart

USB and Trigger Cables

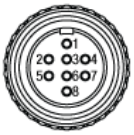
Item #	CAB-DCU-T1		Pin	Assignment
 Click to Enlarge	Connector Device Side	Micro Sub-D, 90° Angled	2	Trigger Input +
	Connector PC Side	USB 2.0 A Male	3	Shield
	USB Standard	Hi-Speed USB2.0	4	USB +5 V
	Trigger In (Bare Wire)	x	5	USB GND
	Flash & Digital Out (Bare Wire)	x	6	Flash Strobe Output +
	Wire Gauge USB	24AWG/2C and 28AWG/1PR	7	Trigger Input -
	Shielding	Double Shielded 80 °C 30 V	8	USB D+
	Length	3 m	9	USB D-



Item #	CAB-DCU-T2		Pin	Assignment
 Click to Enlarge	Connector Device Side	Micro Sub-D, Straight	2	Trigger Input +
	Connector PC Side	USB 2.0 A Male	3	Shield
	USB Standard	Hi-Speed USB2.0	4	USB +5 V
	Trigger In (Bare Wire)	x	5	USB GND
	Flash & Digital Out (Bare Wire)	-	6	Not Connected
	Wire Gauge USB	24AWG/2C and 28AWG/1PR	7	Trigger Input -
	Shielding	Double Shielded 80 °C 30 V	8	USB D+
	Length	3 m	9	USB D-



Item #	CAB-DCU-T3		Pin	Assignment
 Click to Enlarge	Connector Device Side	Hirose HR25-7TP-8S	2	Flash Output[a]
	End Opposite Connectors	Tinned End of Wires	3	GPIO 1, 3.3 V LVCMOS
	Function	GPIO	4	Trigger Input[a] -
	Trigger In (Bare Wire)	yes	5	Flash Output[a] +
	Flash & Digital Out (Bare Wire)	yes	6	GPIO 2, 3.3 V LVCMOS
	Cable Type	Shielded High-Flexible Control Cable 8 x 0.1 mm, Ø4.9 mm	7	Trigger Input[a] +
	Shielding	Single Shielded	8	Output Supply Voltage, 5 V (100 mA)
	Length	2 m	9	N/A



a. These pins are opto-decoupled inside the camera to protect against high or incorrect voltages.

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+1	Qty	Docs	Part Number - Universal		Price	Available
+1			CAB-DCU-T1	Customer Inspired! USB and Trigger Cable (In/Out) for DCU Series and DCC1240 Cameras, 3 m	$141.10	Today
+1			CAB-DCU-T2	Customer Inspired! USB and Trigger Cable (In Only) for DCU Series and DCC1240 Cameras, 3 m	$82.75	Today
+1			CAB-DCU-T3	USB 3.0 I/O Cable, Hirose 25, for DCC3240 and DCC3260 Cameras, 2 m	$100.79	Today

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C-Mount to SM1 Adapters for Cameras

Each CCD camera includes two thread adapters: one external C-Mount to internal SM1 (1.035"-40) and one external C-Mount to external SM1. Replacement adapters are sold below.

Item #	SM1A9	SM1A9TS[a]	SM1A39

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Item #	SM1A9	SM1A9TS[a]	SM1A39
Image (Click To Enlarge)			
Thread 1	External C-Mount (1.00"-32)		
Thread 2	Internal SM1 (1.035"-40)		External SM1 (1.035"-40)
Material	Anodized Aluminum	Black Delrin	Anodized Aluminum
Typical Application	Mount a C-Mount Camera to an Externally Threaded SM1 Lens Tube	Mount a C-Mount Camera to an Externally Threaded SM1 Lens Tube	Mount a C-Mount Camera to an Internally Threaded SM1 Lens Tube

a. Thermally Insulating Adapter

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+1	Qty	Docs	Part Number - Universal		Price	Available
+1			**SM1A9**	Adapter with External C-Mount Threads and Internal SM1 Threads	$19.38	Today
+1			**SM1A9TS**	Customer Inspired! Thermally Insulating Adapter with External C-Mount Threads and Internal SM1 Threads	$22.92	Today
+1			**SM1A39**	Customer Inspired! Adapter with External C-Mount Threads and External SM1 Threads	$20.59	Today

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