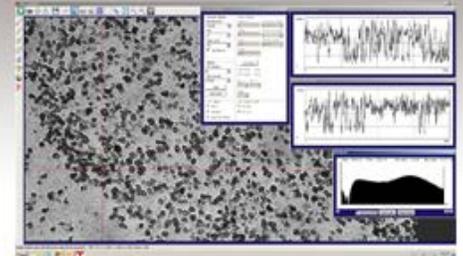


DCC3240M - August 11, 2021

Item # DCC3240M was discontinued on August 11, 2021. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

CMOS CAMERAS: USB 3.0

- ▶ Monochrome Sensor
- ▶ Global Shutter and Trigger
- ▶ 1.3 Megapixel (1280 x 1024) Sensor
- ▶ USB 3.0 Connection for Fast Data Acquisition



GUI and Software Package Included



Front

DCC3240M
 High-Sensitivity USB
 3.0 with Trigger



Back

[Hide Overview](#)

OVERVIEW

Features

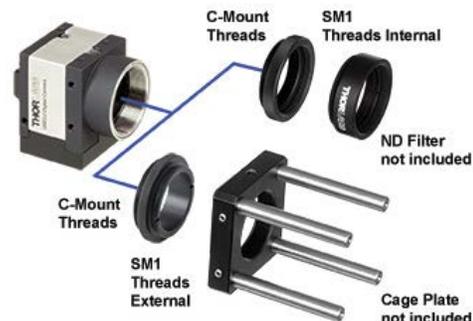
- Easy to Use in a Wide Range of Applications from Microscopy to Monitoring
- 1.3 Megapixel (1280 x 1024 Pixels) Monochrome CMOS Sensor
- Available with Global Shutter and External Trigger
- ThorCam™ Software for Windows® 7 and 10 Operating Systems
- SDK and Programming Interfaces Provide Support for:
 - C, C++, C#, and Visual Basic .NET APIs
 - LabVIEW, MATLAB, and µManager Third-Party Software

DCC3240M Key Specifications	
Resolution	1.3 Megapixels (1280 x 1024)
Sensor	Monochrome
Exposure Mode	Global and Rolling Shutter
Included Cable	USB 3.0
Input/Output Trigger	Yes

The compact, lightweight DCC3240M CMOS camera features a monochrome sensor and offers a full-frame resolution of 1280 x 1024 pixels. It can be used in a wide range of applications from microscopy to monitoring. The camera is controlled and powered via a standard 5 V USB 3.0 port.

The camera includes a CMOS sensor that allows for switching between rolling and global shutter mode, offers a considerably higher dynamic range, and includes an input for an external trigger. For a detailed list of specifications, see the *Specs* tab.

SM1 Thread Compatibility



Compatibility of C-Mount CMOS Cameras with Thorlabs' SM1 internal or external threadings. Our CS-Mount Cameras feature the same compatibility.

For quantitative applications requiring low noise, high quantum efficiency cameras, consider our Quantalux sCMOS and Kiralux CMOS Cameras.

USB and Trigger Cables

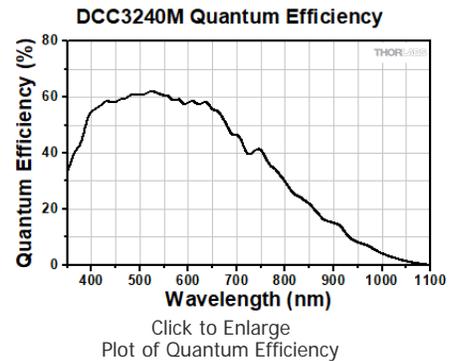
A USB 3.0 cable is included with the DCC3240M camera. As an additional means of connecting and triggering peripheral devices, an optional GPIO cable (item # CAB-DCU-T3) is available separately. The trigger configuration (i.e., the source of the input trigger and the timing for the output trigger) can be set via the provided software or the LabVIEW drivers.

Software

The DCC3240M camera also comes with ThorCam, our Windows-compatible GUI software package. Standard drivers like Direct Show (WDM) and .NET are provided and offer support for LabVIEW. An extensive SDK is available. The C/C++ drivers can additionally be imported to Matlab using MEX files.

[Hide Specs](#)

S P E C S



Item # ^a	DCC3240M
Sensor Type	Monochrome
Effective Number of Pixels (Horizontal x Vertical)	1280 x 1024
Imaging Area (Horizontal x Vertical)	6.78 mm x 5.43 mm
Pixel Size	5.3 μm, Square
Optical Format	1/1.8"
Max Frame Rate	60.0 fps (Freerun Mode) 56.9 fps (Trigger Mode)
ADC ^a Resolution	10 Bits (8 Bits if Connected to USB 2.0)
Sensor Shutter Type	Global and Rolling Shutter
Peak Quantum Efficiency ^b	62%
Read Noise	<30 e ⁻ RMS
Exposure Time	0.009 ms ^c - 2 s ^d
Pixel Clock Speed	5 - 85 MHz
Vertical and Horizontal Hardware Binning	Horizontal, Vertical
Region of Interest (ROI)	4 x 16 Pixels to 1024 x 1280 Pixels, Rectangular
Lens Mount	C-Mount
Mounting Features	1/4"-20 Tap, 6 mm Deep ^e 8-32 (M4) Tap, 6.5 mm Deep w/ Included Adapters
Removable Optic	Uncoated Glass (D263)
Interface	USB 3.0 ^f
Power Consumption	1.3 W ^g
Ambient Operating Temperature	23 to 122 °F (-5 to 50 °C)

Storage Temperature	-4 to 140 °F (-20 to 60 °C)
---------------------	-----------------------------

- a. ADC = Analog-to-Digital Converter
- b. See the graph to the right for more information.
- c. Requires maximum pixel clock frequency.
- d. Requires minimum pixel clock frequency.
- e. Be careful not to thread a screw longer than the depth of the tap into the camera housing, as this could lead to damage.
- f. A USB 2.0 connection can be used, but will significantly decrease the frame rate and will be limited to 8-bit depth operation.
- g. The power consumption depends on the sensor model and the pixel clock setting.

[Hide Shipping List](#)

SHIPPING LIST

Components Included with CMOS Camera		
Item #	Cable	Post Mounting Adapters
DCC3240M	USB 3.0	8-32 and M4 Thread Adapters

[Hide Software](#)

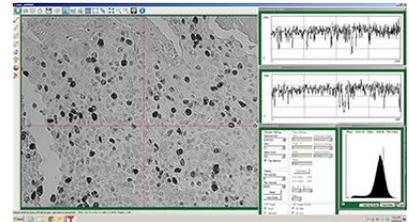
SOFTWARE

ThorCam™

Software

Version 3.5.1

Click the button below to visit the ThorCam software page.



Click to Enlarge
ThorCam Graphical User Interface (GUI)

ThorCam is a powerful image acquisition software package that is designed for use with our cameras on 32- and 64-bit Windows® 7 or 10 systems. This intuitive, easy-to-use graphical interface provides camera control as well as the ability to acquire and play back images. Single image capture and image sequences are supported. Application programming interfaces (APIs) and a software development kit (SDK) are included for the development of custom applications by OEMs and developers. The SDK provides easy integration with a wide variety of programming languages, such as C, C++, C#, and Visual Basic .NET. Support for third-party software packages, such as LabVIEW, MATLAB, and µManager* is available.

*µManager control of Zelux and 1.3 MP Kiralux cameras is not currently supported. When controlling the Kiralux Polarization-Sensitive Camera using µManager, only intensity images can be taken; the ThorCam software is required to produce images with polarization information.

[Hide High-Sensitivity USB 3.0 CMOS Cameras with Global Shutter](#)

High-Sensitivity USB 3.0 CMOS Cameras with Global Shutter



Click to Enlarge

- ▶ Monochrome Sensor
- ▶ Global and Rolling Shutter Modes
- ▶ USB 3.0 and GPIO Ports
- ▶ 60 fps in Freerun Mode and Capable of 229 fps with Limited Area of Interest
- ▶ Trigger Input
- ▶ Ships with USB 3.0 Cable

Limited
STOCK

Item #	DCC3240M
CMOS Sensor Type	Monochrome
Sensitivity Graph	
Exposure Mode	Global and Rolling Shutter
Read Out Mode	Progressive Scan
Resolution	1280 x 1024 Pixels

The DCC3240M monochrome camera has a USB 3.0 connection for improved performance. Compared to the DCC1240, the DCC3240M camera is capable of a faster frame rate (60.0 fps vs. 25.8 fps in Free Run Mode) and lower trigger delay (as low as 3 μ s vs. 20 μ s). The camera is powered via the USB port and also has two GPIOs (General Purpose I/O) that allow it to serve as a trigger for peripheral devices. Faster than the DCC1240 cameras, it can achieve a maximum frame rate of 229 fps (limited ROI).

The front aperture features an internal C-mount thread. The bottom of the housing has a 6 mm deep 1/4"-20 tap, so adapters are included for easy post mounting using either the 8-32 or M4 standard. These camera can also be connected to SM1-Threaded Lens Tubes using the adapters sold at the bottom of this page.

The DCC3240M camera is fully compatible with our C-Mount Camera Lenses and High-Magnification Zoom Lenses that are sold separately. Our standard lenses include fixed focal lengths from 3.5 mm to 75 mm with maximum apertures of up to f/0.95, as well as an 18 - 108 mm focal length, f/2.5 zoom lens. Our high-magnification zoom lenses are a modular system that features magnifications from 0.07 to 28.



The DCC3240M CMOS Camera will be retired and replaced by our new 1.3 MP Kiralux[®] Compact Scientific Cameras (including an NIR-enhanced option) when stock is depleted.

If you require a DCC camera for line production, please contact our OEM Team.

Optical Sensor Format	1/1.8"
Pixel Clock Range^a	5 - 85 MHz
Frame Rate, Freerun Mode^b	60.0 fps
Trigger Input	8-Pin, Hirose Connector
Lens Mounting Thread	C-Mount (1.00"-32) ^c
Post Mounting Thread	1/4"-20 Tap, 6 mm Deep ^d
Dimensions w/ Adapter Plate (H x W x D)	35.0 mm x 29.0 mm x 46.4 mm (1.38" x 1.14" x 1.83")
Weight	60 g (0.13 lbs) w/ Adapter Plate 43 g (0.09 lbs) w/o Adapter Plate
Included Adapters	1/4"-20 to 8-32 and 1/4"-20 to M4

- a. Depends on the PC hardware used.
- b. Requires maximum pixel clock frequency.
- c. Please note that CS-Mount and C-Mount lens mounts both use 1.00"-32 threads but feature different flange-to-sensor distances.
- d. Be careful not to thread a screw longer than the depth of the tap into the camera housing, as this could lead to damage.

Part Number	Description	Price	Availability
DCC3240M	High-Sensitivity USB 3.0 CMOS Camera, 1280 x 1024, Global Shutter, Monochrome Sensor	\$1,376.83	Lead Time

[Hide Optional USB and Trigger Cable for DCC3240M Camera](#)

Optional USB and Trigger Cable for DCC3240M Camera

Item #	CAB-DCU-T3		Pin	Assignment
<p>Click to Enlarge</p>	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, \varnothing 4.9 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.

Part Number	Description	Price	Availability
CAB-DCU-T3	Trigger and I/O Cable, Hirose 25, for DCC3240, DCC3260, WFS30 and WFS40, 2 m	\$103.81	Today

[Hide Camera Thread Adapters](#)

Camera Thread Adapters

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 ^b	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
- b. Delrin[®] is a registered trademark of DuPont Polymers, Inc.

Part Number	Description	Price	Availability
SM1A9	Adapter with External C-Mount Threads and Internal SM1 Threads, 4.4 mm Spacer	\$19.96	Lead Time
SM1A9TS	Customer Inspired! Thermally Insulating Adapter with External C-Mount Threads and Internal SM1 Threads, 6.5 mm Spacer	\$23.61	Today
SM1A39	Customer Inspired! Adapter with External C-Mount Threads and External SM1 Threads, 3.2 mm Spacer	\$21.21	Today



USB 3.0 Digital Camera
THORLABS



DCC3240M Quantum Efficiency

