

# Chameleon™

1.3 MP CCD + USB INTERFACE + COMPACT



- **USB 2.0 480 Mb/s digital video camera**
- **High quality 1.3 MP Sony® EXview HAD CCD®**
- **Ultra-compact and lightweight**
- **General purpose I/O for trigger and strobe**
- **Imaging and control software included**

The Chameleon™ USB 2.0 digital video camera from Point Grey Research is a complete, cost effective and reliable imaging solution. A high sensitivity Sony EXview HAD CCD sensor, combined with a hi-speed USB 2.0 digital interface, makes the Chameleon an ideal choice for demanding imaging applications such as object and gesture tracking, test and measurement, life science and bioscience, augmented reality, multitouch display, security and biometrics, and robot guidance.



Specification	CMLN-13S2M/C
Image Sensor Type	Sony progressive scan interline transfer CCD's with square pixels and global shutter
Image Sensor Model	ICX445 1/3" EXview HAD CCD™
Maximum Resolution	1296(H) x 964(V)
Pixel Size	3.75µm x 3.75µm
Analog-to-Digital Converter	Analog Devices 12-bit ADC
Video Data Output	8, and 16-bit digital data
Image Data Formats	Y8, Y16 (monochrome), 8-bit and 16-bit raw Bayer data (color models)
Digital Interface	5-pin Mini-B USB 2.0 digital interface for camera control, video data transmission, and power
Transfer Rates	480 Mbit/s
Maximum Frame Rate	1296x964 Y8 at 18 FPS
Partial Image Modes	pixel binning and region of interest modes via Format_7
General Purpose I/O Ports	7-pin JST GPIO connector; 4 pins for trigger and strobe, 1 pin +3.3 V, 1 VEXT pin for external power
Gain Control	automatic / manual / one-push gain modes, programmable via software, 0 dB to 24 dB in 0.04 dB increments
Shutter Speed	automatic / manual / one-push modes, programmable via software, 0.01 ms to greater than 10 s (extended shutter mode)
Synchronization	via external trigger or software trigger
External Trigger Modes	DCAM v1.31 Trigger Modes 0, 1 (bulb trigger), 3, and 14 (overlapped trigger and transfer)
Voltage Requirements	4.745 to 5.25 V via the Mini B USB 2.0 interface or JST 7-pin GPIO connector
Power Consumption	2 W (max) at 5 V
Dimensions (L x W x H)	25.5 mm x 41 mm x 44 mm (excluding optics)
Mass	37 grams (including tripod mounting bracket)
Memory Storage	3 memory channels for custom camera settings
Lens Mount	CS-mount (5mm C-mount adapter included)
Emissions Compliance	Complies with CE rules and Part 15 Class B of FCC Rules
Operating Temperature	0° to 45°C
Storage Temperature	-30° to 60°C
Warranty	1 year

# Chameleon™ Features

## Plug and Play Anywhere

The Universal Serial Bus (USB) 2.0 standard provides a high bandwidth 480 Mb/s interface that is well-suited for digital imaging, and is one of the most well-established and popular serial interfaces in use today. USB 2.0 ports are widely available on a variety of hardware platforms, including Macintosh and PC systems, and a variety of laptop, desktop, and small form factor (embedded) systems. This maximizes system compatibility and minimizes the need for add-in PCI or PCI Express interface cards.

## Digital Interfaces for Power and Control

The Chameleon™ camera's 5-pin Mini-B USB 2.0 connector enables the USB 2.0 cable (included in the Development Accessory Kit) to transfer both data and power. This minimizes the need for additional cables or external power sources. The camera also provides a 7-pin general purpose I/O connector. The GPIO connector can be used to synchronize the camera to external devices, such as an external trigger source of light source, power external circuitry, or power the camera via an external device.

## Software

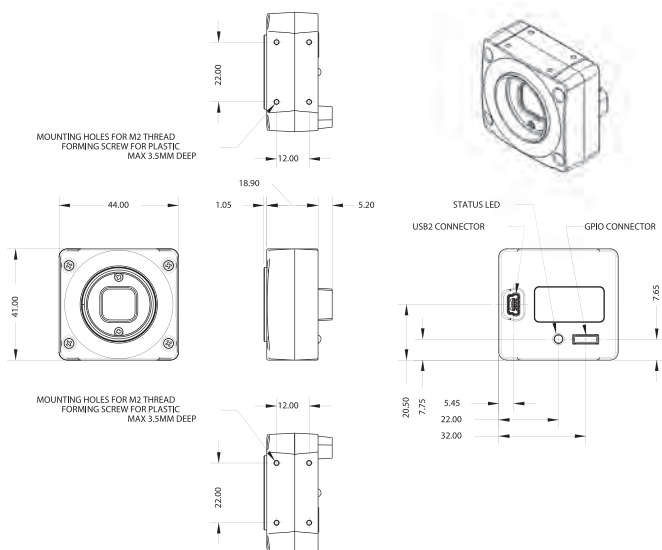
Point Grey's FlyCapture® SDK is designed to support image acquisition and camera control of all Point Grey USB 2.0 and FireWire imaging products. FlyCapture is fully compatible with Microsoft® Windows® 2000/XP/Vista operating systems, and includes the PGRCAM™ device driver, full software API library, demo programs and C/C++ example source code.

## Updatable Firmware

The field-programmable gate array (FPGA) chip controls all camera functionality, including exposure, resolution and frame rate, pixel binning, user memory channels and more. It can also be updated with new functionality in the field.

## Dimensions (in mm)

CAD models available at [www.ptgrey.com/support/downloads](http://www.ptgrey.com/support/downloads).



## Innovative Mechanical Design

Every mechanical component of the Chameleon camera is designed to minimize size and weight and maximize usability. The black plastic case protects the camera's single printed circuit board and image sensor from accidental static discharge and minor abrasions. Additional features include a CS-mount lens holder (compatible with C-mount lenses using the included 5mm adapter), multiple mounting holes, an ASA/ISO-compliant tripod mounting bracket, status LED and removable glass/IR filter system.

## Development Accessory Kit (DEVKIT-01-0003)

Includes all the hardware and software needed for rapid design and prototyping:

- 2 meter USB 2.0 cable (Type A to Mini-B 5-pin)
- ACC-01-3002 GPIO wiring harness
- Chameleon Getting Started Manual
- FlyCapture SDK CD

## CCD Sensor Spectral Response

Sensor datasheets available at [www.ptgrey.com/support/kb/](http://www.ptgrey.com/support/kb/).

