Lw230 & Lw235

2.0 Megapixel USB 2.0 Camera

High Resolution Images in Low Light Conditions

Lumenera's Lw230 and Lw235 series of megapixel cameras are designed to be used in a wide variety of applications, particularly in low-light conditions. Both color and monochrome product models are available. With 1616 x 1216 resolution and on-board processing these cameras deliver outstanding image quality and value for industrial and scientific imaging applications.

Captures Objects in High Speed Motion

Electronic Global Shutter provides capabilities similar to a mechanical shutter, allowing simultaneous integration of the entire pixel array. Ideal for capturing objects in high speed motion.

Live Stream and Still Image Capturing

Uncompressed images in live streaming video and still image capture are provided across a USB 2.0 digital interface. No framegrabber is required. Advanced camera control is available through a complete Software Developer's Kit, with sample code available to quickly integrate camera functions into OEM applications.

Customizable Form Factors

Hardware and software based synchronization trigger is provided standard. Camera models are offered in both color enclosed (Lw235) and board-level (Lw230) form. Custom form factor (sizes) camera models are available.

Application

The Lumenera Camera SDK provides a full suite of features and functions that allow you to maximize the performance of your camera within your application. The SDK is compatible with all USB and GigE based cameras. Microsoft DirectX/DirectShow, Windows API and .NET API interfaces are provided allowing you the choice of application development environments from C/C++ to VB.NET or C#.NET. Full inline IntelliSense autocompletion and documentation is provided with the .NET API interface and is accompanied by a full API manual describing all the camera functions and properties.

Features

- High quality CCD sensor
- Excellent sensitivity with high color reproductivity
- Color or monochrome, interline transfer progressive scan, 2.0 megapixel CCD sensor
- 12 fps at full 1616 x 1216 resolution, 30 fps at smaller regions of interest
- Global shutter for capturing fast moving objects and strobe lighting
- GPI/Os for control of peripherals and synchronization of lighting (4in/4out)
- FCC Class B, CE Ready
- RGB Bayer video output
- Select 8 or 12-bit pixel data
- Simplified cabling - video and full camera control over a single USB cable
- C-mount provided
- DirectShow compatible
- Software compatible with Windows 10, Windows 8.1, Windows 7, Linux, 32 and 64-bit operating systems
- Complete SDK available
- Four (4) year warranty

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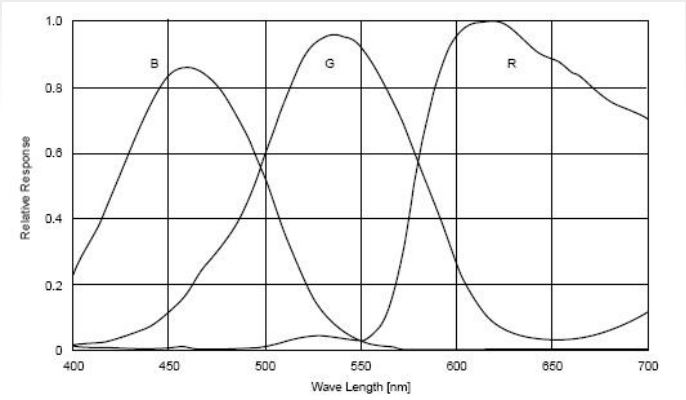
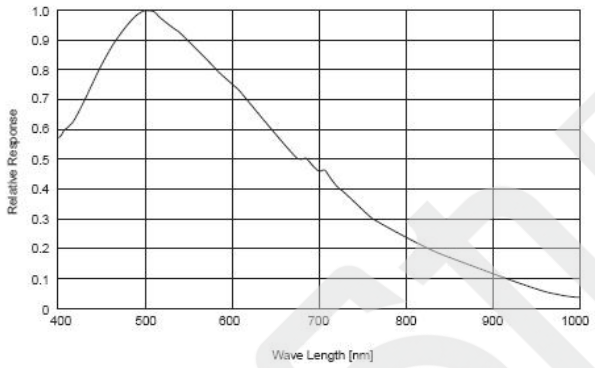
Color Quantum Efficiency Curves



Monochrome Quantum Efficiency Curve



Sensor Specifications	
Image Sensor	Sony ICX274AQ, CCD, color progressive scan
Optical Format	1/1.8"
Imager Size	Diagonal 8.93 mm
Pixel Size	4.4 x 4.4 um
Resolution	1616 x 1216 pixels
Region of Interest Control	Any multiple of 8x8 pixels
Camera Specifications	
Frame Rate	12 fps @ 1616x1216
Bit Depth	8 or 12-bits
Binning Modes	2 x 2 and 4 x 4
Exposure Control	Manual and automatic control
Exposure Range	118us to 1.17s (video) 50us to 10s (snapshot)
Gain Control	Manual and automatic control
Gain Range	1.0 to 23.82 X
White Balance	Manual and automatic control
Camera Characteristics	
Dynamic Range	57 dB
Full Well Capactiy	7,373 c-
Quantum Efficiency	59% (@ 575nm, mono)
Read Noise	12 e-
Dark Current Noise	<1e-/s @ 22 ^{0}C
Mechanical Specifications	
Data Interface	USB 2.0
Lens Mount	Adjustable C-mount standard, (CS-mount option)
Dimensions (HxWxD)	39.62 x 57.15 x 96.52 mm (enclosed) 1.56 x 2.25 x 3.8 inch (enclosed)
Mass	300 g (enclosed)
Operating Temperature	0 to 50 ^{0}C
Storage Temperature	-30 to 70 ^{0}C
Operating Humidity	5 to 95 %, non condensing
Shock / Vibration	50 g shock, 5 g (2 to 200 Hz) vibration
Onboard Memory	Camera has onboard non-volatile memory storage
Camera Software	
Operating Systems	Windows 10, Windows 8.1, Windows 7, Linux, 32 and 64-bit operating systems
Software Interfaces	Windows API, .NET, DirectX
Power and Emissions	
Power Consumption	~2.5 W
Power Requirement	USB bus power, or external 5 V DC, 500 mA
Emissions Compliances	FCC Class BE, CE Certified
Hazardous Materials	RoHS, WEEE Compliant
Warranty	Four (4) year
System Requirements	
Recommended PC Specs	• Pentium 4, 1.3 GHz or higher • 512 MB RAM • 60 MB hard drive free space or more • USB 2.0 Port • Windows 10, 8.1, 7; Linux
Ordering Options	
Lw230M	2.0 Megapixel Monochrome Module (Board Level)
Lw230C	2.0 Megapixel Color Module (Board Level)
Lw235M	2.0 Megapixel Enclosed Monochrome Camera
Lw235C	2.0 Megapixel Enclosed Color Camera
LuSDK	Software Developer's Kit (Web download)
La050315	Transformer, 5VDC, 15W, 3A, International
Camera Includes	
Lu802	2M USB 2.0 A to B cable
Customization Options	
-WOIR	Without IR Cut Filter (in optical path)
-CS	With Adjustable CS-mount lens mount

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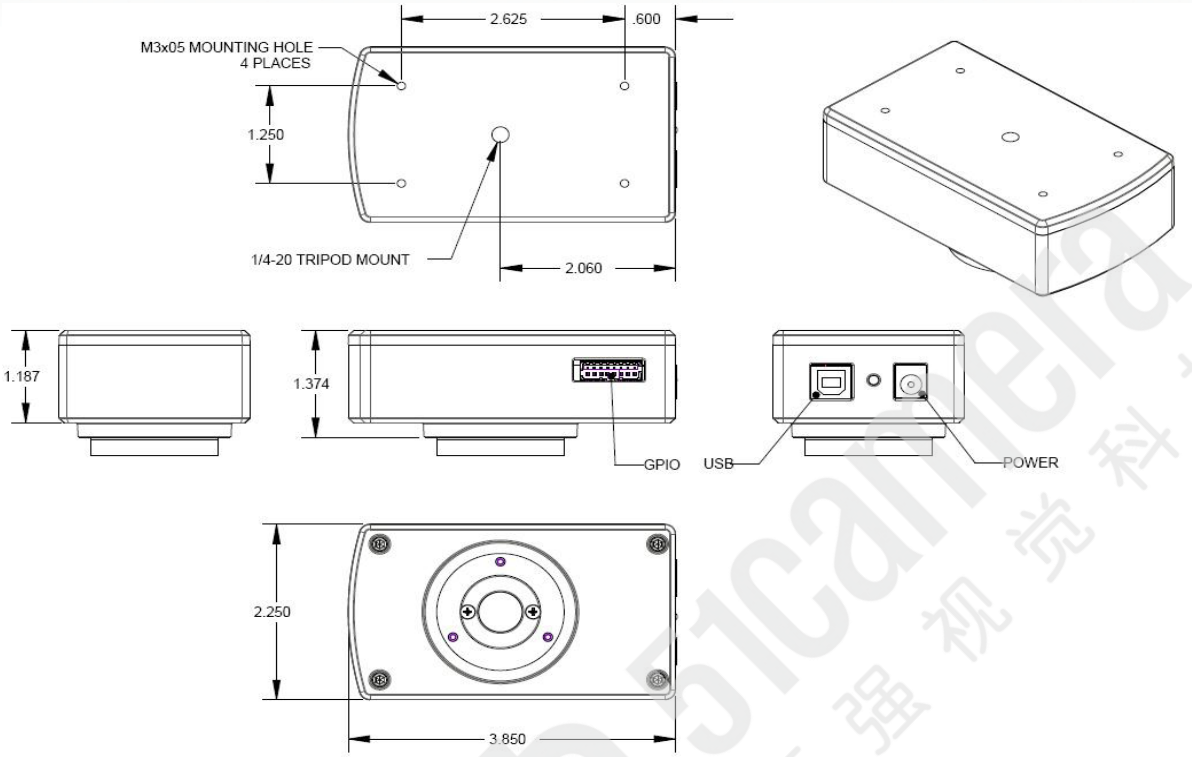
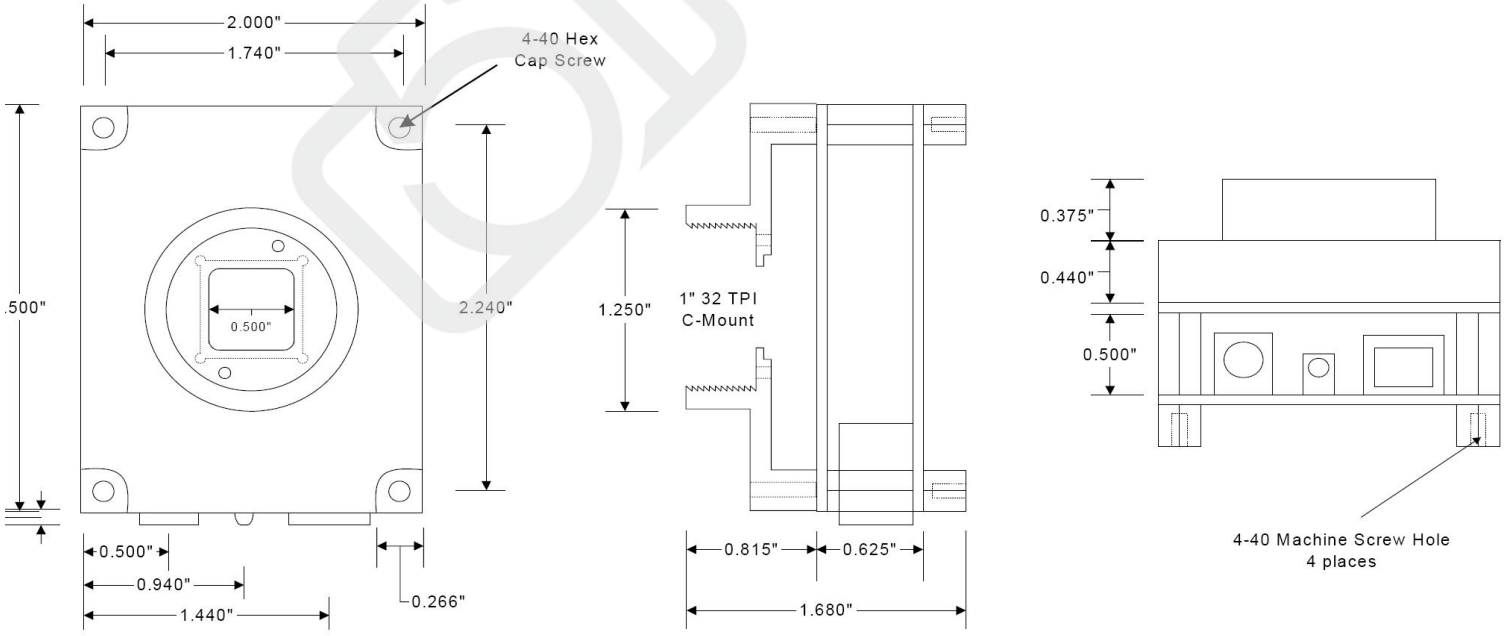
Enclosed Mechanical Drawings



Board Level Mechanical Drawings



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