

## 1.4 Megapixel Cooled CCD USB 2.0 Camera

High Resolution Cooled CCD Color or Monochrome Microscopy Camera for Quantitative Image Analysis



## Outline

Lumenera's INFINITY3-1 camera is designed to be used in a wide variety of scientific applications. Cooled models are ideal in low-light conditions and where high dynamic range is required. Both color and monochrome product models are available.

With 1392x1040 resolution and on-board processing, these cameras deliver outstanding image quality and value for industrial and scientific imaging applications.



Uncompressed images in live streaming video and still-image capture are provided across a USB 2.0 digital interface. No framegrabber is required.

Hardware and software based synchronization trigger is available as an option provided. On-board memory is available for frame buffering. INFINITY3-1 model cameras are offered in both enclosed and board-level form. Custom form factor (sizes) can be provided.

Every INFINITY camera includes [INFINITY\\_ANALYZE](#) software for advanced camera control, image processing, measuring and annotation, and INFINITY CAPTURE.

All Lumenera products are supported by an experienced team of software developers and application engineers. We understand your imaging needs and are here to help you with your integration and development.

## Performance Features

- High-speed USB 2.0 (480Mbps/sec) interface eliminates a framegrabber and facilitates ease of installation on both laptop and desktop computers**
- Available in color or monochrome**
- Cooled feature reduces thermal noise during low light fluorescent imaging**
- Low noise characteristic of the INFINITY3-1 progressive scan 1.4 megapixel CCD image sensor results in crisp color quality for the most demanding brightfield, phase contrast, and fluorescent applications including GFP, FISH, NIR, FRET, life science and geology**
- Full color sub-windowing allows for rapid focus and scanning of samples: 15 fps at full 1392x1040 resolution**
- Select 8 & 12-bit pixel data modes**
- The RGB data captured through each pixel contains 30-bits of color image information resulting in 1024 intensity values**
- Camera control through an intuitive user TWAIN interface results in rapid image capture archiving and documentation for high throughput applications, demanding research environments and teaching facilities**
- The INFINITY3-1 has a compact design equipped with a C-Mount facilitating installation on all microscope configurations including upright, inverted and stereo**
- INFINITY3-1U cameras are software compatible with Windows 2K, Windows XP, Windows Vista and MAC OS 10.4 operating systems**
- Full one (1) year warranty**

# Specifications

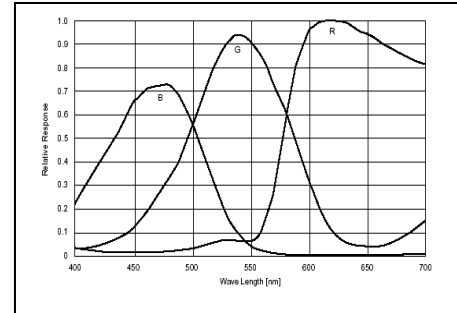
# INFINITY 3-1

## Camera Sensor

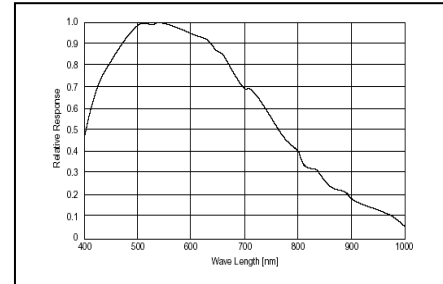
Image Sensor	<b>Sony ICX285 2/3" format, 1.4 megapixel color or monochrome progressive scan CCD sensor</b>
Effective Pixels	<b>1392 X 1040, 1.4 million pixels</b>
Frame Rate	<b>15 fps at 1392x1040, increased through binning and ROI</b>
Digital Output	<b>8 and 12-bit</b>
Dark Current (e-/s)	<b>0.15 electrons / pixel / s when cooled</b>
Pixel Size	<b>6.45µm X 6.45µm</b>
Full well capacity	<b>&gt;18,000 electrons</b>
Readout Noise	<b>8 e- rms</b>
Cooling type	<b>Hermetically sealed and dry gas filled Peltier cooling to 25 degrees Celsius below ambient</b>
Readout Frequency	<b>28.6 MHZ</b>

## Camera Controls

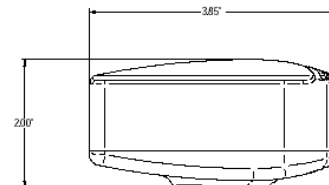
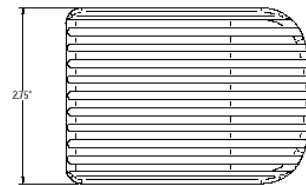
Power Requirement	<b>External 5VDC - 3amp</b>
Power Consumption	<b>~2.5 watts uncooled / ~8.5 watts cooled</b>
Operating Temperature	<b>0° C to +50° C</b>
Operating Humidity	<b>5%-95%, Non-condensing</b>
Integration Time	<b>3.5µs to 20 minutes</b>
Auto Exposure	<b>Automatic / Manual</b>
White Balance	<b>Automatic / Manual</b>
Gain	<b>Programmable / 1 to 10X</b>
Interface	<b>USB 2.0 high-speed interface</b>
Dimensions (L x W x H)	<b>3.85 x 3.5 x 2.446 inches</b>
Lens Mount	<b>C-Mount lens adapter</b>
Binning Options	<b>2x2, 3x3, 4x4</b>



Color Response Curve



Mono Response Curve



## Applications

Fluorescent Microscopy  
Green Fluorescent Protein Applications  
Fluorescent In Situ Hybridization  
DNA Analysis  
Live Cell Imaging  
Brightfield, Darkfield, DIC/Phase techniques  
Near IR Applications  
Histology, Pathology and Cytology  
Forensic Analysis  
Semiconductor Inspection  
Metallurgical Microscopy

## Ordering Information

INFINITY 3-1C	- Color 1.3 MP Cooled CCD Camera
INFINITY 3-1M	- Monochrome 1.3 MP Cooled CCD Camera
LuSDK	- Software Developer's Kit and Accessories

**Full customization available  
to meet your exact needs!**