INFINITY*3-1*

1.4 Megapixel Cooled CCD USB 2.0 Camera

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

INFINITY*3-1*

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 outstanfing 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.

Superior Sensitivity and Color Reproduction

Equipped with a high quality Sony ICX285 CCD sensor, the INFINITY*3-1* has the unmatched light sensitivity needed for low light applications. Superior performance is achieved through low noise electronics, high grade components and Lumenera's unique thermal management techniques. With an extremely high dynamic range and large 6.45 µm square pixels, this camera is an excellent choice for light-challenged applications.

Full Image Analysis Software Included

INFINITY CAPTURE, an intuitive image capture program, and INFINITY ANALYZE, a full image analysis package offering; camera control, measurement, annotations, tiling and post capture enhancement, are both included. Camera and software combine to create a complete microscopy imaging solution for your application.

USB 2.0 Plug-and-Play Interface

Sharing and installation of one or more cameras on a single computer is quick and simple through a high-speed USB 2.0 interface. This camera is compatible with the USB 3.0 interface, supporting the existing USB 2.0 frame rates.

Third-Party Software Integration

INFINITY cameras are integrated into a variety of third-party software packages through direct drivers or with TWAIN/DirectX support.

Mac Camera Software

Lumenera offers support for INFINITY camera users operating on a Mac platform. A Mac camera driver, ImageJ plug-in and the INFINITY ANALYZE for Mac application package are available for the INFINITY3-1. Please refer to the Lumenera web page www.lumenera.com for up-to-date details.

Superior Technical Assistance Center (TAC)

As a Lumenera customer you gain access to the TAC group and knowledge base which provide full support for cameras, software and microscopy applications.

Features

- Low noise progressive scan 2/3" 1.4 megapixel Sony ICX285 CCD sensor
- Full color sub-windowing allows for rapid focus and scanning of samples; up to 54 fps at 640 x 480 resolution
- 8 or 12-bit pixel data modes
- Software compatible with Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and 64-bit operating systems
- Includes TWAIN and DirectX/ Direct Show support

Recommended Applications

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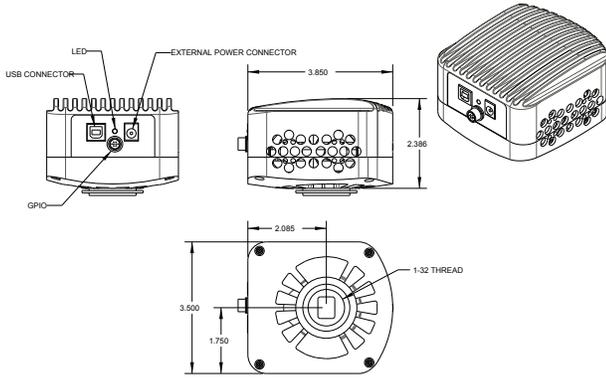- Metallurgical Microscopy

Warranty

- Four (4) year warranty
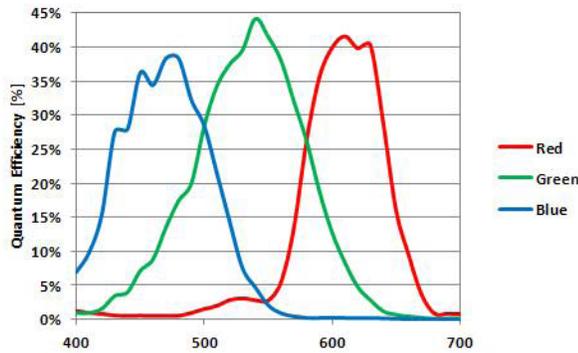
Microscope Coupler
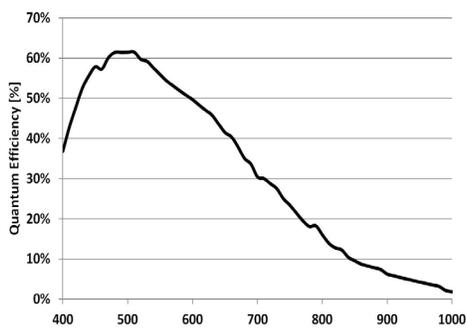
- Requires 0.67 x C-Mount coupler

Mechanical Drawing

USB CONNECTOR
LED
EXTERNAL POWER CONNECTOR
GPIO
3.850
2.386
2.085
1-32 THREAD
3.500
1.750

INFINITY3-1 WITH GPIO

Color Quantum Efficiency Curves

- Red
- Green
- Blue

Monochrome Quantum Efficiency Curve

Sensor Specifications	
Image Sensor	SONY ICX285, CCD, color or mono, progressive scan
Optical Format	2/3 "
Imager Size	Diagonal 11 mm
Pixel Size	6.45 x 6.45 µm
Resolution	1392 x 1040 pixels
Region of Interest Control	Any multiple of 8 x 8 pixels (8 x 8 pixels minimum)
Camera Specifications	
Frame Rate	15 fps at full resolution, 54 fps at 640 x 480 (ROI)
Bit Depth	8 or 12-bit
Binning Modes	2 x 2, 4 x 4
Exposure Control	Manual and automatic control
Exposure Range	3 µs to 211 ms (video), 2 µs to 10 min (snapshot)
Gain Control	Manual and automatic control
Gain Range	1 to 10 x
White Balance	Manual and automatic control
Camera Characteristics (at 4.7 fps)	
Sensitivity	Mono: 6.6 DN/(nJ/cm²), Color: 5.3 DN/(nJ/cm²) (Global and channel gains at unity)
Dynamic Range	70 dB
Full Well Depth	18,000 e-
Quantum Efficiency	44 % (color peak), 62 % (mono peak)
Read Noise	8 e-
Dark Current Noise	<0.15 e-/s at 22 ºC
Mechanical Specifications	
Data Interface	USB 2.0
Lens Mount	Adjustable C-Mount standard
Dimensions	97.8 x 88.9 x 60.6 mm 3.85 x 3.5 x 2.4 inches
Mass	780 g
Operating Temperature	0 to 50 ºC
Storage Temperature	-30 to 70 ºC
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, 8, 7, Vista, Mac OS X 10.7, 32 and 64-bit
Power and Emissions	
Power Consumption	~2.5 W uncooled/ ~8.5 W cooled
Power Requirement	5 V DC. 12.5 W (included with camera)
Emissions Compliances	FCC Class B, 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, 7, Vista, Mac OS X 10.7, 32 and 64-bit
Included In The Box	
INFINITY3-1	1.4 MP digital camera + 3m USB 2.0 cable
LuINFSW-DVD	DVD with INFINITY user application software, TWAIN driver and documentation
Ordering Information	
INFINITY3-1C	Color 1.3 MP Cooled CCD Camera
INFINITY3-1M	Monochrome 1.3 MP Cooled CCD Camera
INFINITY ANALYZE MODULE	INFINITY ANALYZE Advanced Features Module (Multi-Focus Composition and Spherical Aberration Correction Features)
LuSDKSW	Software Developer's Kit (Web Download)

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