

# INFINITY2-1R

Industry's Best Uncooled 1.4 Megapixel CCD  
USB 2.0 Camera



## INFINITY2-1R - Pink in Support of Breast Cancer Research

For each and every INFINITY2-1R sold Lumenera donates \$20 in support of Breast Cancer Research. Contributions will not be capped.

### INFINITY2-1R

The reengineered INFINITY2-1R scientific camera offers a significant performance increase for quantitative and low-light applications over its predecessor. Improved thermal management, combined with a much higher dynamic range and 14-bit output have resulted in a versatile entry-level research camera. The INFINITY2-1R easily manages seconds of exposure time with a dark current rating of less than 1 e-/s.

### Superior Sensitivity

The INFINITY2-1R has a dynamic range of 64 dB allowing users to image unevenly lit samples. The resulting images show detail in bright and dark areas not normally seen in lower dynamic range cameras. Advanced thermal management allows for long exposure times of several minutes with results comparable to much higher priced cooled cameras.

### Full Image Analysis Software Included

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

### USB 2.0 Plug-and-Play Interface

Installation of one or more cameras on a single computer is quick and simple through a high-speed USB 2.0 interface.

### 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

A Mac camera driver and ImageJ plug-in are available. Please refer to the Lumenera web site at [www.lumenera.com](http://www.lumenera.com) for up-to-date details.

### Superior Technical Assistance Center (TAC)

Access to TAC and the knowledge base are included, providing full support for cameras, software and microscopy applications.

## Features

- Improved noise performance over the first generation camera
- Incredibly low dark current noise in an uncooled camera
- High dynamic range of 64 dB
- Low noise progressive scan 1/2", 1.4 megapixel Sony ICX205 CCD sensor
- Full color sub-windowing allows for rapid focus and scanning of samples; up to 22 fps at 640 x 480 resolution
- 8 or 14-bit pixel data modes
- \$20 from each camera sale donated to support Breast Cancer Research

## Recommended Applications

- Low Light Fluorescence
- Darkfield
- Live Cell Imaging
- Histology
- Pathology
- Cytology
- Brightfield
- Defect Analysis
- Semiconductor Inspection
- Metrology
- Gel Documentation
- Quantitative Analysis

## Warranty

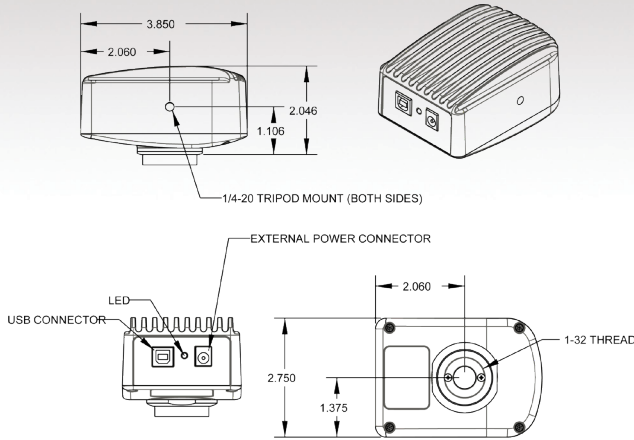
- One (1) year parts and labor

## Microscope Coupler

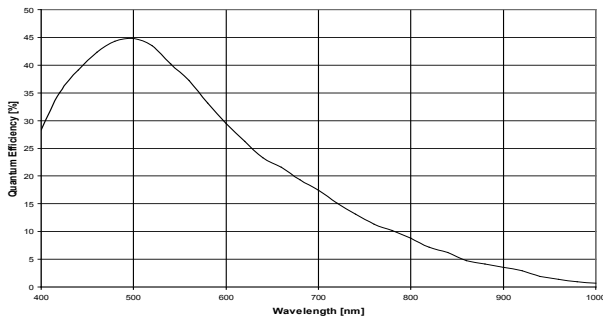
- Requires 0.5 x C-mount coupler



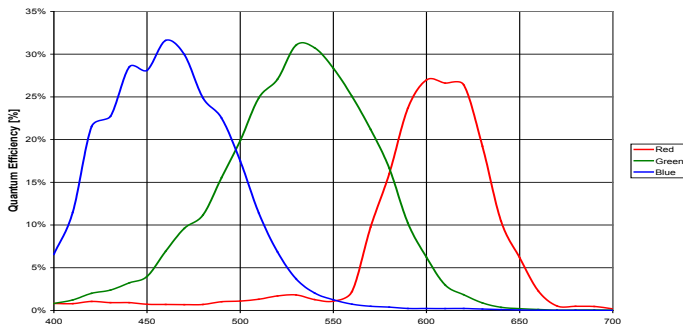
Mechanical Drawing



Monochrome Quantum Efficiency



Color Quantum Efficiency



| Ordering Information    |  |
|-------------------------|--|
| INFINITY2-1RC           | 1.4 MP CCD Color Camera  |
| INFINITY2-1RM           | 1.4 MP CCD Monochrome Camera   |
| INFINITY ANALYZE MODULE | INFINITY ANALYZE Advanced Features Module (Multi-Focus Composition and Spherical Aberration Correction Features) |
| LuSDKSW                 | Software Developer's Kit (Web Download)  |
| LuSDKSW-DVD             | Software Developer's Kit (DVD)   |
| La20515                 | 5 V DC, 2.5 A, 12.5 W Power Supply   |

| Sensor Specifications              |   |
|------------------------------------|---|
| Image Sensor                       | Sony HAD ICX205, CCD, color/mono, progressive scan  |
| Optical Format                     | 1/2"  |
| Active Area                        | 7.6 x 6.2 mm  |
| Pixel Size                         | 4.65 x 4.65 µm  |
| Resolution                         | 1392 x 1040 pixels  |
| Region of Interest Control         | Any multiple of 8 x 8 pixels, 120 x 120 pixels minimum  |
| Camera Specifications              |   |
| Frame Rate                         | Up to 15 fps at full resolution, 22 fps at 640 x 480 (ROI)  |
| Bit Depth                          | 8 or 14-bit   |
| Binning Modes                      | 2 x 2, 4 x 4 binning modes  |
| Exposure Control                   | Manual and automatic control  |
| Exposure Range                     | 48 µs to 500 ms (video), 5.4 µs to 8 min (snapshot)   |
| Gain Control                       | Manual and automatic control  |
| Gain Range                         | 0.5 to 15 x   |
| White Balance                      | Manual and automatic control  |
| Camera Characteristics (@ 4.7 fps) |   |
| Sensitivity                        | 2.5 DN/(nJ/cm²) [at 8-bit, 1 x gains]   |
| Dynamic Range                      | 64.6 dB   |
| Full Well Capacity                 | 14,500 e-   |
| Quantum Efficiency                 | 32 % (peak color) 44 % (peak mono)  |
| Read Noise                         | 8.5 e-  |
| Dark Current Noise                 | < 1 e-/s at 22 °C   |
| Mechanical Specifications          |   |
| Data Interface                     | USB 2.0   |
| Lens Mount                         | Adjustable C-mount standard   |
| Dimensions (enclosed)              | 57.15 x 97.79 x 39.624 mm<br>2.25 x 3.85 x 1.56 inch  |
| Mass                               | 340 g   |
| Operating Temperature              | 0 to 50 °C  |
| Storage Temperature                | -30 to 70 °C  |
| Operating Humidity                 | 5 to 95 %, non-condensing   |
| Shock / Vibration                  | 50 G shock, 5 G (2 to 200Hz) vibration  |
| Camera Software                    |   |
| Operating Systems                  | Windows XP, Windows Vista, Windows 7, Mac OSX, 32 and 64-bit  |
| Power and Emissions                |   |
| Power Consumption                  | ~2.5 W  |
| Power Requirement                  | USB bus power (external 5 V DC, 500 mA optional)  |
| Emissions Compliances              | FCC Class B, CE Certified   |
| Hazardous Materials                | RoHS, WEEE Compliant  |
| Warranty                           | One (1) year  |
| System Requirements                |   |
| Recommended PC Specs:              | <ul style="list-style-type: none"> <li>Pentium 4, 1.3 GHz or higher</li> <li>512 MB RAM</li> <li>500 MB hard drive free space or more</li> <li>USB 2.0 Port</li> <li>Windows 7</li> </ul> |
| Minimum PC Specs:                  | <ul style="list-style-type: none"> <li>600 MHz Processor</li> <li>256 MB of RAM</li> <li>200 MB hard drive free space</li> <li>USB 2.0 Port</li> <li>Windows XP</li> </ul>                |
| Included In The Box                |   |
| INFINITY2-1R                       | 1.4 MP Digital Camera for USB 2.0   |
| LuINFSW-DVD                        | DVD with INFINITY user application software, TWAIN driver and documentation   |
| Lu802                              | 2 m USB 2.0 Cable   |

