INFINITY2-1R
Research-grade 1.4 megapixel CCD USB 2.0 camera
Scientific digital imaging for documentation and image analysis in Life Science, Clinical and Material Science Applications

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The INFINITY2-1R scientific camera offers a significant performance increase for quantitative and low-light applications over its predecessor. Reduced operating temperatures 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 without worry. 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 without the need for a higher priced cooled camera.

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 combined 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.

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 for the INFINITY2-1R.

Superior Technical Assistance Center (TAC)
As a customer you gain access to the TAC group and knowledge base, which provide 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 ½” 1.4 megapixel Sony ICX205 CCD sensor
• Full color sub-windowing allows for rapid focus and scanning of samples; up to 30 fps at full resolution
• 8 or 14-bit pixel data modes
• Software compatible with Windows XP, Vista and 7, 32 and 64-bit
• Includes TWAIN and DirectX / Direct Show support

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

Warranty
• Two (2) years parts and labor

Microscope Coupler
• Requires 0.5 x C-mount coupler
**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**:
  - Full resolution (1392 x 1040): Up to 30 fps
  - 640 x 480 (ROI): 52 fps
- **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 ºC

**Mechanical Specifications**

- **Data Interface**: USB 2.0
- **Lens Mount**: Adjustable C-mount standard
- **Dimensions (enclosed)**: 57.15 x 97.79 x 39.624 mm
  - 2.25 x 3.85 x 1.56 inch
- **Mass**: 340 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 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)
- **Emissions Compliances**: FCC Class B, CE Certified
- **Hazardous Materials**: RoHS, WEEE Compliant
- **Warranty**: One (1) year

**System Requirements**

- **Recommended PC Specs**:
  - Pentium 4, 1.3 GHz or higher
  - 512 MB RAM
  - 500 MB hard drive free space or more
  - USB 2.0 Port
  - Windows 7
- **Minimum PC Specs**:
  - 600 MHz Processor
  - 256 MB of RAM
  - 200 MB hard drive free space
  - USB 2.0 Port
  - Windows XP

**Included In The Box**

- INFINITY 2-1R 1.4 MP Digital Camera for USB 2.0
- LuSDKSW-DVD Software Developer’s Kit (DVD)
- Lu802 2 m USB 2.0 Cable

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**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)
- **Lu20515**: 5 V DC, 2.5 A, 12.5 W Power Supply

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