## INFINITY 3-1URF

High-Speed, Low Noise, and High Sensitivity, 1.4 Megapixel CCD USB 2.0 Camera

Cooled Performance from an Uncooled Camera

Scientific Digital Camera for Documentation and Image Analysis in Low Light Life Science, Clinical and Material Science Applications.



#### **INFINITY Fluorescence Series Bundle Includes**

- INFINITY 3-1URF camera
- INFINITY ANALYZE and INFINITY CAPTURE Software
- INFINITY Advantage Pack LuIAP-2
- Free 9-month trial of Media Cybernetics Image-Pro Premier
- Extended 5-year warranty



The INFINITY3-1URF scientific camera is designed specifically for low light applications including fluorescence and gel documentation. The excellent color reproduction of the INFINITY3-1URF CCD camera ensures simple, high quality image capture. A high dynamic response easily manages difficult samples without increasing exposure levels that reduce the quality of preview and captured images. This camera is ideal for challenging lighting conditions found in life science, clinical and industrial applications. The INFINITY3-1URF provides live video up to 30 frames per second (fps) at full 1392 x 1040 resolution. The research-grade designation of the INFINITY3-1URF is a testament to the low noise electronics, high-grade components and unique thermal management techniques. The result is an industry-leading, high-performance, low noise digital camera.

#### **Superior Sensitivity and Color Reproduction**

Equipped with Sony's ICX285 CCD sensor, the INFINITY3-1URF 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.

### Free 9-Month Trial of Media Cybernetics Image-Pro Premier

Image-Pro Premier offers intuitive tools that make it easy to capture, process, measure, analyze and share your images and valuable data.

#### **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 INFINITY 3-1URF.

#### **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**

INFINITY

FLUORESCENCE SERIES

Software Bundle

Included!

- Low noise 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 14-bit pixel data modes
- Software compatible with Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and 64bit operating systems
- Includes TWAIN and DirectX/ Direct Show support

#### **Image-Pro Premier Software Features**

- 64-bit single capture and streaming to disk
- Quick access to intensity and morphology over-time studies
- Extensive microscopy file format support and simple color compositing
- Industry-leading co-localization analysis on whole images or userdefined regions
- Analysis tools to identify, count, measure, and classify whole cells, nuclei, membranes, cytoplasmic structures, and more
- Perform population studies using thousands of images with intuitive batch processing
- Discount offer for purchase of software
- Image-Pro Premier is compatible with Windows XP SP 3 and later (32 bit), and Windows 7 Professional and Ultimate (32 and 64 bit)

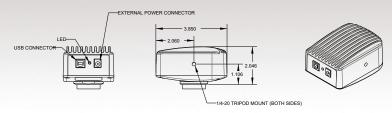
#### Warranty

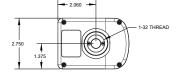
• Five (5) years parts and labor

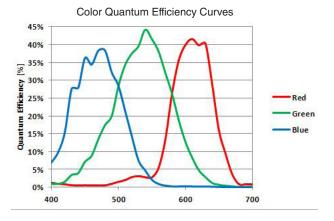


INFINITY3-1URF WWW.LUMENERA.COM

#### Mechanical Drawing



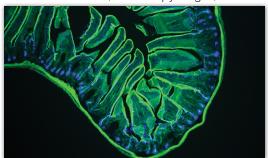




# Monochrome Quantum Efficiency Curve 70% 60% 50% 400 500 600 700 800 900 1000

#### Sample Images

For sample images please visit our online gallery at: www.lumenera.com/microscopyimages/





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 minimultiple of 8 x 8 pixels (8 x 8 pixels minimultiple of 8 x 8 pixels (8 x 8 pixels minimultiple pixels   Any multiple of 8 x 8 pixels (8 x 8 pixels minimultiple pixels   Any multiple of 8 x 8 pixels (8 x 8 pixels minimultiple pixels   Any multiple of 8 x 8 pixels (8 x 8 pixels minimultiple pixels   Any multiple of 8 x 8 pixels   Any multiple pixels		
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Exposure Range 3 µs to 211 ms (video), 2 µs to 10 min (snapshot Gain Control Manual and automatic control Gain Range 0.5 to 35 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 18,500 e- Quantum Efficiency 44 % (color peak), 62 % (mono peak)  Read Noise 6 e- Dark Current Noise <1 e-/s at 22 °C  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 inch  Mass 340 g  Operating Temperature 0 to 50 °C  Storage Temperature -30 to 70 °C  Operating Humidity 5 to 95%, non-condensing  Onboard Memory Camera has onboard non-volatile memory store Camera Software  Operating Systems Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption ~2.5 W (5 V DC, 2.5 A, 12.5 W power supply of recommended for optimal performance at 30 fg  Emissions Compliances FCC Class B, CE Certified  Hazardous Materials RoHS, WEEE Compliant  Warranty Five (5) years	Binning Modes	2 x 2, 4 x 4
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Gain Range  Mitte 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  18,500 e-  Quantum Efficiency  44 % (color peak), 62 % (mono peak)  Read Noise  6 e-  Dark Current Noise  V1 e-/s at 22 °C  Mechanical Specifications  Data Interface  USB 2.0  Lens Mount  Adjustable C-Mount standard  Dimensions  97.8 × 88.9 × 60.6 mm  3.85 × 3.5 × 2.4 inch  Mass  340 g  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption  -2.5 W (5 V DC, 2.5 A, 12.5 W power supply of recommended for optimal performance at 30 fp  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Warranty  Five (5) years	Exposure Range	3 µs to 211 ms (video), 2 µs to 10 min (snapshot)
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  18,500 e-  Quantum Efficiency  44 % (color peak), 62 % (mono peak)  Read Noise  6 e-  Dark Current Noise  41 e-/s at 22 °C  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 inch  Mass  340 g  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption  -2.5 W (5 V DC, 2.5 A, 12.5 W power supply of recommended for optimal performance at 30 fig.  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Warranty  Five (5) years	Gain Control	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  18,500 e-  Quantum Efficiency  44 % (color peak), 62 % (mono peak)  Read Noise  6 e-  Dark Current Noise  41 e-/s at 22 °C  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 inch  Mass  340 g  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption  -2.5 W (5 V DC, 2.5 A, 12.5 W power supply of recommended for optimal performance at 30 fg  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Five (5) years	Gain Range	0.5 to 35 x
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  18,500 e- Quantum Efficiency  44 % (color peak), 62 % (mono peak)  Read Noise  6 e- Dark Current Noise  Adjustable C-Mount standard  Dimensions  97.8 x 88.9 x 60.6 mm 3.85 x 3.5 x 2.4 inch  Mass  Operating Temperature  70 or C  Operating Humidity  Onboard Memory  Camera Software  Operating Systems  Power Consumption  Power Requirement  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  No de -  18,500 e-  18,500 e	White Balance	Manual and automatic control
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Quantum Efficiency  Read Noise  6 e- Dark Current Noise  < 1 e-/s at 22 °C  Mechanical Specifications  Data Interface  Lens Mount  Adjustable C-Mount standard  Dimensions  97.8 x 88.9 x 60.6 mm 3.85 x 3.5 x 2.4 inch  Mass  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption  Power Requirement  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Windows 10, 9, 7, Wester Compliant  Warranty  Five (5) years	Dynamic Range	70 dB
Read Noise  Dark Current Noise  <1 e-/s at 22 °C Mechanical Specifications Data Interface  Lens Mount  Adjustable C-Mount standard  Dimensions  97.8 x 88.9 x 60.6 mm 3.85 x 3.5 x 2.4 inch  Mass  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera has onboard non-volatile memory storated and the standard  Power and Emissions  Power Consumption  Power Requirement  USB bus power (optional external power supply recommended for optimal performance at 30 fg  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Warranty  Five (5) years	Full Well Depth	18,500 e-
Dark Current Noise < 1 e-/s at 22 °C  Mechanical Specifications  Data Interface USB 2.0  Lens Mount Adjustable C-Mount standard  Dimensions 97.8 × 88.9 × 60.6 mm 3.85 × 3.5 × 2.4 inch  Mass 340 g  Operating Temperature 0 to 50 °C  Storage Temperature -30 to 70 °C  Operating Humidity 5 to 95%, non-condensing  Onboard Memory Camera has onboard non-volatile memory storated and the standard of the storage Temperature operating Systems Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption -2.5 W (5 V DC, 2.5 A, 12.5 W power supply of the suppl	Quantum Efficiency	44 % (color peak), 62 % (mono peak)
Mechanical Specifications  Data Interface  Lens Mount  Adjustable C-Mount standard  Dimensions  97.8 × 88.9 × 60.6 mm 3.85 × 3.5 × 2.4 inch  Mass  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera has onboard non-volatile memory storated and the standard of the storage storage of the storage	Read Noise	6 e-
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Lens Mount  Adjustable C-Mount standard  Dimensions  97.8 × 88.9 × 60.6 mm 3.85 × 3.5 × 2.4 inch  Mass  340 g  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera has onboard non-volatile memory storated and the storage of the storage	Mechanical Specifications	
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Mass  3.85 x 3.5 x 2.4 inch  Mass  340 g  Operating Temperature  0 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera has onboard non-volatile memory storated and the storage of the s	Lens Mount	Adjustable C-Mount standard
Operating Temperature  Operating Temperature  -30 to 50 °C  Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera has onboard non-volatile memory storated and the storage of the sto	Dimensions	
Storage Temperature  -30 to 70 °C  Operating Humidity  5 to 95%, non-condensing  Onboard Memory  Camera has onboard non-volatile memory storated and software  Operating Systems  Power and Emissions  Power Consumption  -2.5 W (5 V DC, 2.5 A, 12.5 W power supply on the commended for optimal performance at 30 fg  Emissions Compliances  Hazardous Materials  Warranty  -30 to 70 °C  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and 20 fg  Vista Mac OS X 10.7, 32 and 20 fg  Camera has onboard non-volatile memory storated and 20 fg  Camera has onboard non-volatile memory storated and 20 fg  Vista Mac OS X 10.7, 32 and 20 fg  Camera has onboard non-volatile memory storated	Mass	340 g
Operating Humidity  Onboard Memory  Camera has onboard non-volatile memory stora  Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and  Power and Emissions  Power Consumption  Power Requirement  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  Warranty  Storage Stor	Operating Temperature	0 to 50 °C
Onboard Memory  Camera has onboard non-volatile memory stora  Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption  -2.5 W (5 V DC, 2.5 A, 12.5 W power supply or Consumption  Power Requirement  USB bus power (optional external power supply recommended for optimal performance at 30 fg  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Warranty  Five (5) years	Storage Temperature	-30 to 70 °C
Camera Software  Operating Systems  Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption  -2.5 W (5 V DC, 2.5 A, 12.5 W power supply of USB bus power (optional external power supply recommended for optimal performance at 30 fg  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Warranty  Five (5) years	Operating Humidity	5 to 95%, non-condensing
Operating Systems Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and Power and Emissions  Power Consumption ~2.5 W (5 V DC, 2.5 A, 12.5 W power supply of USB bus power (optional external power supply recommended for optimal performance at 30 fg  Emissions Compliances FCC Class B, CE Certified  Hazardous Materials RoHS, WEEE Compliant  Warranty Five (5) years	Onboard Memory	Camera has onboard non-volatile memory storage
Power and Emissions  Power Consumption	Camera Software	
Power Consumption ~2.5 W (5 V DC, 2.5 A, 12.5 W power supply of USB bus power (optional external power supply recommended for optimal performance at 30 ft Emissions Compliances FCC Class B, CE Certified  Hazardous Materials RoHS, WEEE Compliant  Warranty Five (5) years	Operating Systems	Windows 10, 8, 7, Vista, Mac OS X 10.7, 32 and 64-bit
Power Requirement  USB bus power (optional external power supply recommended for optimal performance at 30 fg  Emissions Compliances  FCC Class B, CE Certified  Hazardous Materials  RoHS, WEEE Compliant  Warranty  Five (5) years	Power and Emissions	
recommended for optimal performance at 30 fg  Emissions Compliances FCC Class B, CE Certified  Hazardous Materials RoHS, WEEE Compliant  Warranty Five (5) years	Power Consumption	$\sim\!2.5$ W (5 V DC, 2.5 A, 12.5 W power supply optional)
Hazardous Materials RoHS, WEEE Compliant Warranty Five (5) years	Power Requirement	USB bus power (optional external power supply recommended for optimal performance at 30 fps)
Warranty Five (5) years	Emissions Compliances	
	Hazardous Materials	RoHS, WEEE Compliant
	Warranty	Five (5) years
Included in the Box	Included In The Box	
INFINITY3-1URF 1.4 MP Digital Camera and 3m USB 2.0 Cable	INFINITY3-1URF	1.4 MP Digital Camera and 3m USB 2.0 Cable
LuINFSW-DVD DVD with INFINITY user application software, T driver and documentation	LuINFSW-DVD	DVD with INFINITY user application software, TWAIN driver and documentation

Ordering Information	
INFINITY3-1URFC	1.4 MP Uncooled CCD Color Camera
INFINITY3-1URFM	1.4 MP Uncooled CCD Monochrome Camera
LuSDKSW	Software Developer's Kit (Web Download)
La050315	5 V DC, 2.5 A, 12.5 W Power Supply

#### **Recommended Applications**

Fluorescence Microscopy; Green Fluorescence Protein; Fluorescence In Situ Hybridization; DNA Analysis; Live Cell Imaging; Brightfield, Darkfield, DIC/Phase; Near IR Imaging; Histology, Pathology and Cytology; Forensic Analysis; Gel Documentation; Quantitative Analysis



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