DIGITAL IMAGING MADE EASY

PRODUCT DATASHEET

RETIGA™ 3000

High Resolution, Snapshot Fluorescence

Fluorescence Imaging with a Larger Perspective

The Retiga 3000 is the ideal camera for high resolution snapshot fluorescence documentation. With 2.8 million pixels, a 4.54µm pixel pitch and a high quantum efficiency of 75%, the Retiga 3000 offers higher resolution and sensitivity than most standard fluorescence microscopy cameras.

Unlike traditional fluorescence microscopy cameras that use a 6.5µm pixel sensor, the 4.54µm pixels in the Retiga 3000 are capable of Nyquist sampling new high NA 20X or 40X objectives, allowing the camera to fully exploit the boost in optical resolution and field of view (FOV). This combination allows users to drastically increase the amount of data that can be collected by a single frame, increasing the number of cells that can be monitored simultaneously and reducing the number of frames required for whole slide imaging.

In the past, smaller pixels resulted in substantially less sensitivity, consequently limiting their use in fluorescence microscopy. However, with very low noise camera electronics, a high peak quantum efficiency of 75% and low dark current, the Retiga 3000 offers superior resolution without compromising on sensitivity.

The Retiga 3000 uses a fast to set up USB 2.0 data connection and includes the easy to use QCapture Pro™ software for Windows saving you time and money.

RETIGA™ Series

features	benefits
Switch Between Low and High Magnifications without Compromise ▪ 2.8 Mega Pixels with 4.54µm pixel pitch	▪ Large numbers of small pixels are ideal for low magnification, large FOV work ▪ Small pixels take advantage of the increased optical resolution with new low magnification, high NA objectives ▪ Increases FOV and light flux per pixel ▪ Use binning to combine pixels and improve sensitivity at high magnifications
Less Light? Not a Problem ▪ 75% QE combined with low noise electronics	▪ Minimize exposure time to reduce cell photo-bleaching and photo-toxicity ▪ Achieve higher resolution imaging without compromising on sensitivity
Focusing Frame Rates ▪ 6.3 fps at full resolution ▪ 11.6 fps binned 2x2	▪ Increased ease of use with faster focusing and XY searching ▪ Monitor live cell events with higher temporal resolution
Easy Compatibility with Virtually Any Windows PC ▪ USB 2.0 ▪ QCapture Pro	▪ No cards to install, plug and play simplicity* ▪ Included image acquisition software QCapture Pro, combines a simple work-flow with basic analysis tools

**Minimum computer specifications required to ensure performance. Please see the QImaging website for more details.*

Retiga™ 3000 Specifications

ccd sensor	
Sensor Type	Sony ICX-674 Scientific Interline CCD (Color or Monochrome)
CCD Array	1940x1460
Pixel Size	4.54µm x 4.54µm
Sensor Dimensions	8.8mm x 6.6mm (11mm diagonal)
Peak Quantum Efficiency	75% at 600nm*
Full Well Capacity	16,000e- single pixel (24,000e- binned 2x2)

camera	
Digital Output	14-bit
Readout Frequency	20MHz
Read Noise	6e-
Frame Rate	6.3 fps at full resolution 11.6 fps binned 2x2
Exposure Time Range	25µs - 30min
Supported Binning Modes	1x1, 2x2, 4x4, 8x8
Supported Regions of Interest	User Defined
Gain Control	Gain 1 = 0.5x (High Light: 2x single pixel full well = max bit depth) Gain 2 = 1x (Mapped: single pixel full well = max bit depth) Gain 3 = 3x (Low Light:1/3 single pixel full well = max bit depth)
Dark Current Rate	0.005 e/p/s at 0C
Cooling	0ºC stabilized
Digital Interface	USB 2.0
Triggering I/O Signals	Trigger In, Expose Out, Trigger Ready Out, Shutter Out
Supported Triggering Modes	Trigger First, Strobe, Bulb
Optical Interface	2/3", C-mount optical format
Mounting Hole Thread Size	1/4"-20 thread
Camera Dimensions	98mm x 125mm x 146mm
Weight	3.10 lbs, 1.406 kg
Computer Platforms/ Operating Systems	Windows 7 (64/32 bit), Windows 8 (64/32 bit) Refer to the QImaging website for the latest list of minimum computer recommendations
Power Requirement	5V DC, 4A Maximum

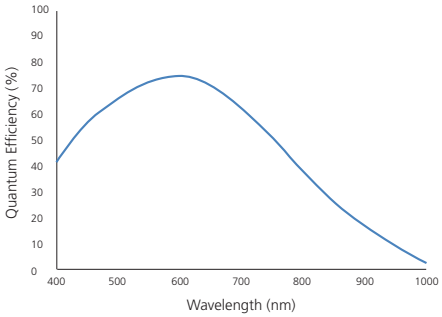
applications

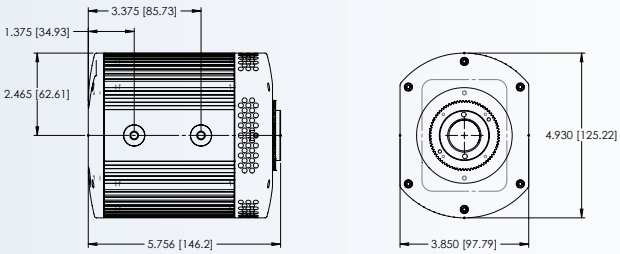
- **Live Cell Time-Lapse Fluorescence**
- **High Content Screening**
- **Imaging Cytometry**
- **Immunofluorescence**
- **Whole Slide Imaging**
- **BioChip Analyzers and Gel Documentation**

included

- **Retiga 3000 Scientific CCD Camera**
  - Model: 01-RET-3000-R-M-14-C (monochrome, 14-bit)
  - Model: 01-RET-3000-R-CLR-14-C (color, 14-bit)
- *Power Supply*
- *USB 2.0 Cable*
- *QCapture Software for PC*
- *Access to SDK*
- *Limited Warranty*

spectral response





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**Measured for monochrome version of the Retiga 3000.*
Note: Specifications are typical and subject to change.

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