

**Telling the story behind great science... at a happily ever after price.**

Great instruments don't create great science, but they are essential to telling the story. QImaging puts the right tool in your hands when the goal is fast, sensitive imaging and documentation in true plug-and-play fashion. With features and specifications that you'd expect from a camera twice the price, the performance of the Retiga R1 will help write the tale of your experiments.

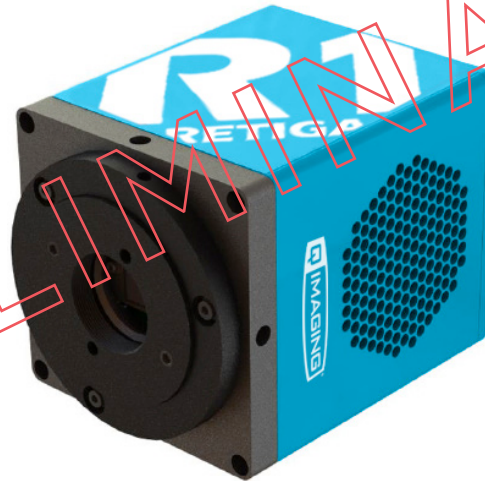
The Retiga R1 has the technical features you need in a scientific camera to improve limits of detection and quantification. More importantly, the camera becomes an intuitive extension of your imaging system, smoothly delivering data from the super speed USB3.0 interface to your computer.

Inside the R1 camera, QImaging introduces Intelligent Quantification™ - on camera intelligence features that correct for defective pixels, remove accumulated dark current, and make high dynamic range imaging available. Fast 50 MHz pixel digitization increases camera frame rate to give you all the speed you need for any laboratory imaging challenge.

A great camera deserves great software for acquisition - it's the way you interface with your data. Ocular™ is the all new imaging platform that's ready to become your go-to capture program. Based on controls you are already familiar with, it will be love at first click.

Scientific cameras are the cornerstone of the highest performing imaging instruments in a lab. Through careful selection of image sensors and components, the R1 will redefine your expectations, even for routine, applications. You will not find an easier to use camera on the market anywhere, or a better value for this price... Call us to demo one today.

**The Retiga R1™: Imaging and Documentation**



PRELIMINARY

imaging needs	solutions
<p><b>Extreme Low Light Imaging</b></p>	<ul style="list-style-type: none"> <li>■ 75% peak QE combined with low noise electronics reveals the weak signals missed by industrial cameras</li> <li>■ Increased exposure time and binning enables detection of the faintest signals with deep sensor cooling</li> </ul>
<p><b>Rapid Find and Focus</b></p>	<ul style="list-style-type: none"> <li>■ 50MHz two port readout delivers frame rate for finding, focusing and imaging samples</li> <li>■ Reduce photobleaching and phototoxicity on samples.</li> </ul>
<p><b>Flawless Images</b></p>	<ul style="list-style-type: none"> <li>■ Intelligent Quantification provides advanced real-time FPGA algorithms to deliver better image quality</li> </ul>

# RETIGA R1™ Specifications

## ccd sensor

Sensor Type	Sony ICX-825 Scientific Interline CCD (Monochrome or Color)
CCD Array	1360 x 1024
Pixel Size	6.45µm x 6.45µm
Sensor Dimensions	8.8mm x 6.6mm (11mm diagonal)
Peak Quantum Efficiency	75% at 600nm
Full Well Capacity*	16,000e <sup>-</sup> single pixel (24,000e <sup>-</sup> with on-chip binning)

## camera

Digital Output	16 bit
Digitization Rate	USB3: 50MHz high frame rate
Read Noise (typical)*	< 8 e <sup>-</sup> RMS typical
Frame Rate*	30 fps at full resolution 45 fps binned 2x2
Exposure Time Range	25µs - 60min
Supported Binning Modes	1x1, 2x2, 4x4, 6x6, 8x8, 12x12, 16x16, 24x24
Dark Current Rate (typical)*	0.0005 e/p/s at -20°C regulated
Sensor Cooling	-20°C stabilized at 22°C ambient Thermoelectric cooling with forced air
Intelligent Quantification Features	Defect correction (nearest neighbor) Dynamic Dark Frame subtraction

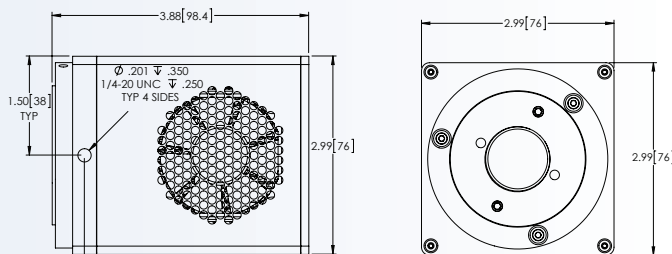
## interfacing

Computer Platforms/ Operating Systems	Windows 7 (64 bit), Windows 8 (64 bit) Refer to the QImaging website for the latest list of minimum computer recommendations
Digital Interface	USB3.0 (USB2 compatible at reduced max fps)
Triggering I/O Signals	Trigger In, Expose Out, End-of-Frame, Shutter Out
Supported Triggering Modes	Trigger First, Strobe, Bulb

## mechanical

Optical Interface	1", C-mount optical format
Mounting Hole Thread Size	1/4" - 20 thread, 4 sides
Camera Dimensions	98.4mm x 76mm x 76mm (length x width x height)
Weight	1.55lb, 0.72kg
Power Requirement	12V DC, 5A

\*These are preliminary results, subject to change.



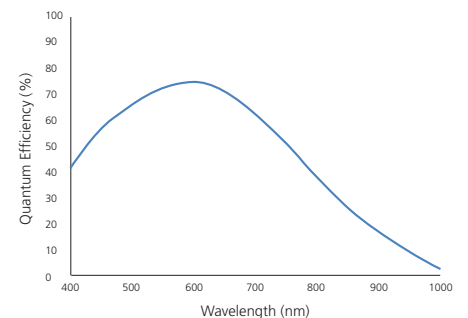
## WHY RETIGA R1?

- Value - maximize your research budget
- Proven technology - built on Sony ICX825 sensor
- Feature rich - cooled, fast frame rate and Intelligent Quantification
- Ocular - powerful and intuitive capture software
- Service - unparalleled sales and support personnel
- Plug and play and image away

## included

- Retiga R1 Scientific CCD Camera
  - Model: 01-RET-R1-R-M-16-C (monochrome)
  - Model: 01-RET-R1-R-CLR-16-C (color)
- Power Supply
- USB 3.0 Cable
- Ocular™ Imaging Software
- Access to SDK
- Limited Warranty

## spectral response



Note: Specifications are typical and subject to change.

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