

# Advanced Features !



## ORCA<sup>®</sup>-R<sup>2</sup>

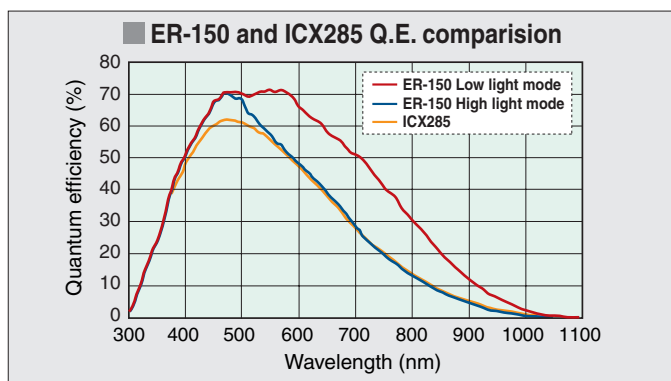
### ORCA-R2 : Next Generation Scientific Digital CCD Camera

Maximum Q.E.

over **70%**

**Maximum Q.E. over 70 % with ER-150 interline CCD**

Hamamatsu's proprietary ER-150 CCD provides unmatched sensitivity in the visible to near-infrared region. Example, the Q.E. at 700 nm is approx. twice good as one of ICX-285 CCD chip. Moreover, the flexible high light and low light modes of operation covers a wide range of applications.



★ This sample is typical of the CCD characteristics, not guaranteed.

Readout speed

**16.2 f/s**

**Rapid readout 16.2 frames/s with low readout noise at full resolution (1344X1024 pixels)**

Rapid readout speed of 16.2 frames/s at full resolution. 115.1 frames/s readout is possible with 8x8 binning and 8 sub-array. The universal IEEE1394b interface provides fast, easy, reliable operation.

Readout speed	High speed readout	1 × 1		16.2 frames/s
		binning		
			2 × 2	28.4 frames/s
			4 × 4	45.7 frames/s
			8 × 8	64.3 frames/s
			1 × 1	8.5 frames/s
	High precision readout	binning	2 × 2	15.6 frames/s
			4 × 4	26.7 frames/s
		8 × 8	40.6 frames/s	

Cooling temperature

**-40 °C**

**- 40 °C in Water cooling and - 35 °C in Air cooling**

Selectable dual cooling as standard allows for maximum flexibility. Optimal heat radiation design with the maintenance free hermetic vacuum sealed chamber achieves very good cooling which provides significantly low dark current of 0.0005 electrons/pixel/s.

Cooling method / temperature	Forced-air cooled	- 35 °C
	Water cooled	- 40 °C (Water temperature : +20 °C)
Dark current		0.0005 electrons/pixel/s (at - 40 °C)

**HAMAMATSU**

# Camera, Software Solution for Scientific Imaging Microscopy

## Scientific Digital Camera

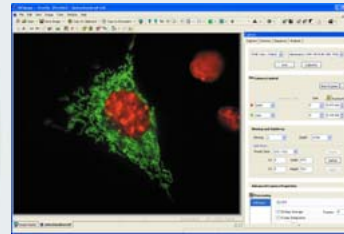
- Fluorescence ● Luminescence
- Color ● Wide FOV ● High speed



Various scientific digital cameras including  
**ORCA-R<sup>2</sup>**

## Dedicated Software

- Image acquisition ● Real-time analysis
- Peripheral control, Time-lapse



Imaging software optimized for image acquisition and analysis



A NEW imaging microscopy product combines a high-performance digital CCD camera with dedicated software

### FEATURES

- Carefully designed for easy operation
- Flexible and expandability
- Selected analysis functions
- Supports a wide range of peripheral devices

### APPLICATIONS

- Multidimensional time-lapse imaging
- Ratio Imaging
- High-speed image acquisition
- Motion tracking analysis
- Particle analysis
- Protein localization
- FRET



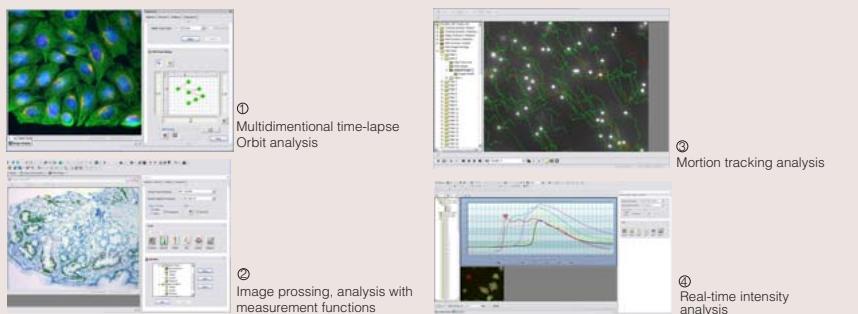
Learn more about ORCA-R2

**orca-r2.com**

### HCImage features carefully designed for easy operation with functional flexibility



### HCImage operation, features allows real-time image intensity analysis and ratio calculation



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