

Reality Check

Relative SNR—How does your camera compare?

- Compare relative signal-to-noise ratio (SNR) plots for different cameras.
- See how changing camera specs affects SNR.

$$SNR = \frac{QE * S}{\sqrt{F_n^2 * QE * (S + I_b) + (N_r/M)^2}}$$

QE = Quantum efficiency

S = Photons/pixel

F_n = Noise factor

I_b = Background

N_r = Readout noise

M = EM gain

TECHNICAL GUIDE: RELATIVE SNR

CAMERA SPECS FOR THE RELATIVE SNR INTERACTIVE GRAPH

CAMERA	SENSOR	NOISE FACTOR	QE (%)	PIXEL SIZE (μm)	READOUT NOISE (rms in electrons)
Perfect	CCD or CMOS	1	100	16	0
ImagEM	EM-CCD	<1	93	16	0.2 (Nr/M = 100/500)
ORCA-Flash4.0 (slow scan)	CMOS	1	68	6.5	1.5
ORCA-Flash4.0 (fast scan)	CMOS	1	68	6.5	1.9
ORCA-R2	CCD	1	67	6.45	6

CONTACT

<http://www.hamamatsu.com>