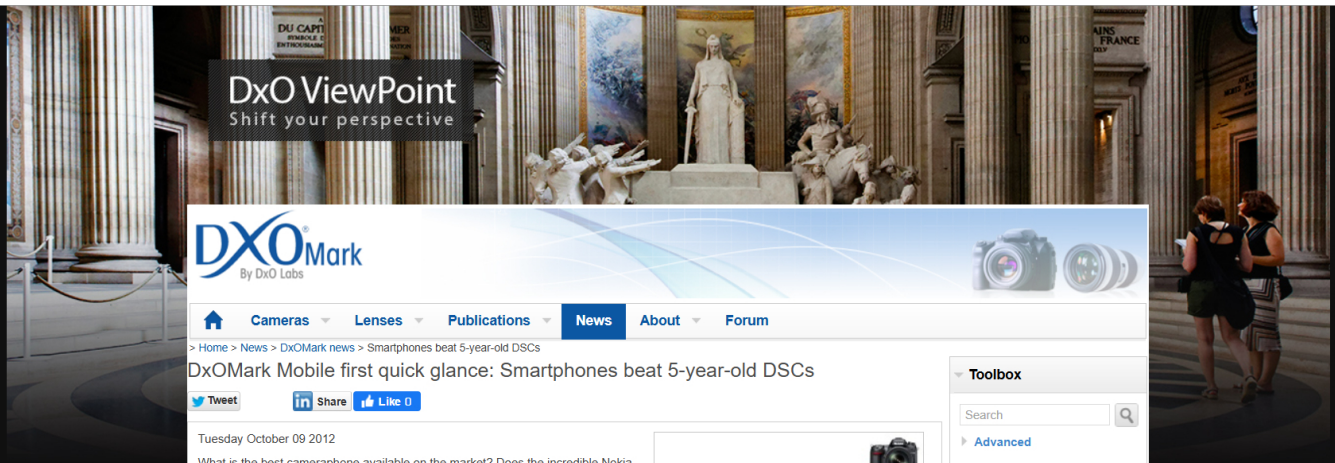
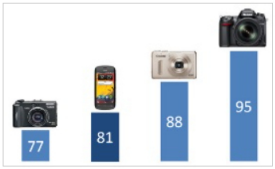


DxOMark Mobile first quick glance: Smartphones beat 5-year-old DSCs

Tuesday October 09 2012

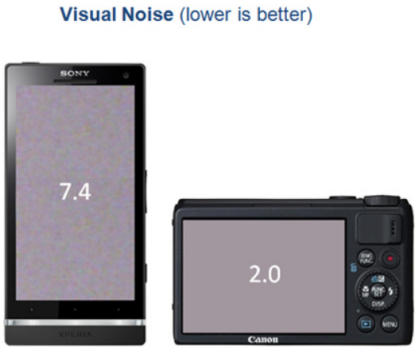
What is the best cameraphone available on the market? Does the incredible Nokia 808 PureView sensor mean the end of the DSC era? How fine are full HD videos shot with your smartphone compared to DSC's ones? Here are our answers…



Is a smartphone worth using as a digital still camera?

Like the iPhone 5, most of today's competitive smartphones sport a camera with a sensor of at least 8megapixels. This is a far cry from one of the world's first mass-produced camera cellphones, the Sharp-made J-SH04, which had a sensor resolution of 110,000 pixels, or just 0.1-Mpix. Nokia has blown all of these specifications out of the water with its new, bulky, 41-megapixel Nokia 808 PureView.

But shrinking and squeezing more megapixels onto a sensor's surface does not necessarily translate to better image quality. Smaller pixels and their reduced area-size absorb less light, which consequently leads to a reduction in their signal-to-noise ratio, often leading to noisier images, as can be seen in the following graph comparing a smartphone and a DSC (both with 12-Mpix sensors).



The effect of small pixels on noise can be seen in the graph for two cameras, both of which have a 12-Mpix sensor. Visual noise (measured using DxOMark Mobile protocols under a tungsten illuminant at 20 lux) is around 4 times higher for the Sony Xperia S smartphone compared to the Canon Powershot S100 DSC.

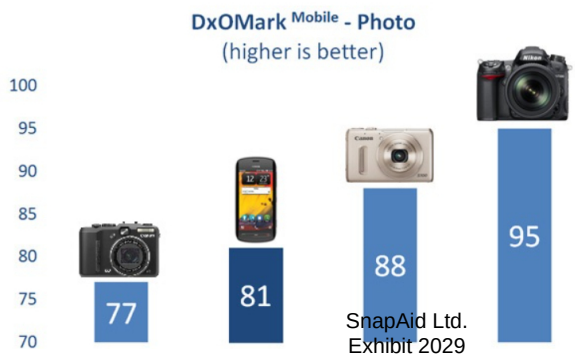
Many mobile devices address noise through their imaging filters and processors. But tamping down noise frequently leads to other image defects, such as loss of detail and texture, as pictured below for the Galaxy S III.

The Galaxy S III's denoising filter aggressively prevents noise, but has the effect of softening images, as seen in the photoson the left. The iPhone 4S, right, struggles with tamping down noise, but better maintains texture and details. Both images were taken at 20 lux and under tungsten luminance.

These few examples give some clues about the deep knowledge of mobile-specific defects necessary to develop accurate testing protocols for mobile imaging. But we also gave ourselves another challenge when designing DxOMark Mobile protocols, because we wanted to be able to compare mobile cameras with other kinds of digital cameras. And after measuring tens of available smartphones, tablets, DSCs and DSLRs, here are our first key findings:

The best smartphone on the market for shooting still images takes better photos than a 5-year-old high-end compact

Yes, the implausible 41-MPix Nokia 808 PureView sensor is fulfilling its promise, but let us reassure you that it is *not* outperforming the new generation of DSCs, and that there is a long way to go to attain DSLR image quality (as shown in the following graph):



Talks and comments

Added by pictum | October 11
Re: Which Sensor Reviews Do You Want?

Added by WolfgangExler | October 11
Re: Which Sensor Reviews Do You Want?

Added by steshaster | October 11
Why iso isn't iso

Added by steshaster | October 11
Raw is not Raw

Added by ag08025 | October 11
300mm f/2.8 L IS USM II vs 300mm f/4 L IS USM

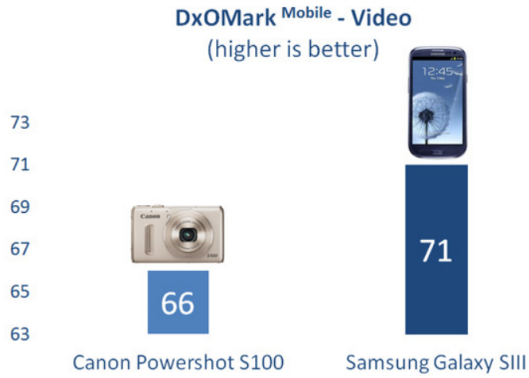
Added by Lexington | October 10
Re: Which Sensor Reviews Do You Want?

Added by hoodlum | October 10
What happened to Canon?

The Nokia 808 PureView, the best-ranked mobile for taking photos in the DxOMark Mobile database, achieves a still image performance in between that of a 5-year-old DSC and a 1-year-old DSC's, as summarized by DxOMark Mobile - Photo scores.

For taking awesome videos, the best mobiles have an incredible advantage over quite recent DSCs

The full HD videos of the Samsung Galaxy SIII, the best smartphone DxOMark Mobile has tested so far, are truly impressive, with better quality than those of the Canon Powershot S100, as shown in the graph below.



The Samsung Galaxy SIII takes the lead on video performance over the 1-year-old Canon Powershot S100 DSC, as summarized by DxOMark Mobile - Video scores.

We will be publishing more detailed analyzis and comparisons in the next few weeks, and as DxOMark Mobile moves ahead, we are open to suggestions and feedback!