

Do you really need full frame?

Written by Administrator

Friday, 11 June 2010 19:24 - Last Updated Saturday, 12 June 2010 09:07

When digital DSLRs arrived we got the option to use APS-C size sensors or full frame. Originally, DSLR sensors were very expensive. A smaller sensor was much less expensive than a bigger one, so we started to use smaller "cropped" sensors. The main driver behind cropped sensors was cost, of course. Doubling the size of a sensor on a linear scale may increase the cost sixteen times, or so. Even if we strive for the ultimate quality, costs are important. It is quite possible to build a perfect lens at a very high cost, but most lenses are good at a reasonable cost. We forsake quality for economy.

The situation now is that we have a lot of APS-C cameras and a lot of quite reasonable lenses. We have APS-C sensors and lenses like 16-85/3.5-5.6 VR (Nikon), 17-55/2.8IS (Canon) or the Sony 16-80/3.5-4.5. These lenses are optimized for APS-C format and are very good. If you have an APS-C camera you really need to have a quite extreme lens to achieve wide angle. The Canon 10-20/3.5-4.5 EFS fills the bill.

If we want to go full format there are a few options. The Canon 5DII and the Sony Alpha 850/Alpha 900 are full format cameras with high resolution. These cameras have double resolution above APS-C, it's like going from A2-prints to A1 prints. If all your printing is A2 you may get along with APS-C but a full frame camera can take you to A1. An A2 print from a full frame DSLR with 20+ MPixels will be slightly better than an A2 print from 12+ MPixel APS-C DSLR, ***but your mileage may vary.***

Nikon does not have an 'amateur priced' full format full resolution DSLR. The D3X is much more expensive than either the Canon 5DII or the Sony Alpha 850/900. The Nikon D700 cannot match the resolution of the Canon or the Sony but is more "professional" than either one and does offer excellent low light performance

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Especially Canon users may consider this:

Canon seems to have excellent telephoto lenses but they don't really excel on Wide Angle zooms. So let's consider standard zooms. Canon users have two excellent choices for full frame.

The Canon 24-105/4

The Canon 24-70/2.8

Both these lenses are excellent. I would probably choose the 24-105/4 if I had Canon. It's a useful range, good optics and IS. Both of the above lenses should be excellent performers on full frame. Neither may be entirely sharp in the corners at 24 mm but they are probably as good as any other lens of similar range.

Real wide angles are a bit harder. There are not that many really great wide angles around. Canon themselves have some options:

- The 16-35/2.8 seems to be somewhat underrated. It has some real issues with resolution in the corners at 16 mm and is not really great at 35. Still, in the wide end it's a pretty good lens.

- The 17-40/4 is less expensive than 16-35/2.8 but is also a less good performer.

Depending on your needs, it may be good enough

- Canon has a very good 17/4 TS (Tilt and Shift) lens, it's expensive but good.

- Zeiss makes a really excellent 21/2.8 lens for both Nikon and Canon. If 21 mm is what you are asking for this is the lens to buy.

- Zeiss also makes an 18/3.5 lens. This lens is not really on par with the 21/2.8, and odds

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are that it's not significantly better than the 16-35/2.8.

- Tamron makes a 17-35/2.8-4 lens which is quite good according to some reports. I may have some reservations, however. It's a quite attractive lens anyway, may be worth a try.

- Sigma makes a 12-24/4.5-5.6 lens that covers full frame. In my view the corners on the Sigma 12/24 are not acceptable, but there is no other non fisheye lens yielding such a wide angle. I have taken some good pictures with that lens, but must be aware of it's limitations.

- Finally, Nikon makes a great 14-24/2.8 lens. May be the best wide angle for full frame DSLRs ever made and definitively the best zoom. It can be fitted to Canon bodies with an adapter but it will be a strictly manual lens only useful on tripod.

The comments here are based on test reports and not own experience. With exception to the Sigma 12-24 which I happen to own.

Resources

I'd recommend anyone considering serious investment in Canon or Nikon equipment to look at Lloyd Chamber DAP site and also specially at his pages on Zeiss lenses. Both pages are pay sites, but I'd suggest that spending a small amount on good information is a good idea before spending thousands of dollars on new equipment:

[DAP site](#)

[Zeiss Lenses site](#)

Lens tests at Photozone and SLR gear are free

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<http://www.photozone.de>

<http://www.slrgear.com>

To sum it up

There is no doubt that there are real and significant benefits of full format. These are essentially two:

- A larger format collects more photons so low light performance and DR will increase. Keep in mind that those advantages are not radical, it's about a factor of two, that is a like shooting 100 ISO instead of 200 ISO.
- A larger format allows for larger prints. Improvement is about one "A" size if viewing distance is constant.

Now it's always nice to have the best available equipment, but it represents a significant investment. Also, a full frame DSLR is bound to be more bulky than a smaller APS-C body with lenses optimized for APS-C. Especially for street shooting, a Sony Alpha 700 using a 16-80/3.5-4.5 lens will be much more practical than a Sony Alpha 900 and a big 24-70/2.8 lens. Utilizing the resolution advantage of the Alpha 900 takes some careful work. **My own**

experience

I have both APS-C and full frame. I mostly use full frame but occasionally use my APS-C as walkabout camera and for street shooting. I print A2 size normally, and the APS-C camera certainly fills the bill. In A2 prints there is a small advantage to the Alpha 900 (24.6 MP, full frame) but certainly much less than what I would expect based on pixel peeping.

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