

## ***The Megapixel Myth: How to Do More with Less***

Just a few years ago a 6mp (megapixel) camera cost over \$20,000. Today that same 20K will get you over 30mp. Wow, a five fold increase in quality for the same paltry 20K! Right? Not exactly. Not even. Here's why.

While files sizes are increasing dramatically, image quality has remained about the same (or in some cases less) at normal reproduction sizes. It seems counterintuitive but larger files are only one factor in image quality and resolution. In fact larger files can often contain less actual resolution than a file from a lower megapixel camera. The reason for this is that as more and more data is crammed onto the same sized chips lens performance is compromised. In other words a lens that was very sharp on your old 6mp is now soft on your 22mp+ chip due to the magnification of any chromatic aberration that may be present in the lens. You now have a bigger but softer file. Smaller yet sharp files are much more scalable. Enlarging a smaller yet sharp file can yield excellent results. Enlarge a big, soft file and all you get is a bigger, soft file. In the film world it would be analogous to shooting sharp 2 1/4 as compared to soft 4x5. Guess which wins.

Most commercial photography is destined for a printing press so detail and resolution is ultimately limited to the resolution of the press. In most cases this rarely exceeds 175 lpi (lines per inch).

The highest quality 6mp cameras in general have more than enough resolving power to exceed the resolution of most presses at full page and much more than that if enlarged skillfully. That said not all 6mp or for that matter, 39mp files are equal. Some chips are more sensitive to chromatic aberration than others (Kodak). Some cameras are noisier/grainy-er (Phase One). Some camera software imposes noise reduction that effectively smears fine detail (Capture One). Some digital SLRs employ rather heavy anti-aliasing filtration to avoid moiré that also cuts fine detail (Canon). All of these factors play a role in determining actual apparent resolution and detail.

### **When is more, More?**

Of course a large native file does have applications. All other factors being equal, an image produced on a 39mp camera using an optimized digital lens at the optimal aperture will appear more detailed when enlarged and viewed at a very close distance than a smaller native file. The obvious application would be poster or larger size fine art intended for the gallery. Very large prints intended for commercial use such as point of purchase are usually viewed from further away. Larger viewing distance completely negates any advantage to the high native mp file. For example, the same shot done on a 6 or 39mp camera will look identical on a billboard viewed from a block away. Accordingly there is no apparent difference between a good 6mp file and a good 39mp file viewed at full page an arms-length away.

## **Conclusion**

When possible choose a camera system that produces the smallest file appropriate for the intended output. Client demands notwithstanding, you wouldn't shoot every project on 8x10 film just because it has the most potential resolution. Determining which camera system is best for a given project can be challenging unless you have done extensive comparative testing of varying subjects under different lighting conditions. Ask your colleagues or a consultant. Do some testing.

Whatever you do don't cave into the pressure to needlessly upgrade. Chances are that good old 11mp back of yours will do as good a job or better for 99% of all commercial projects as the behemoth that is all the rage at Photokina.

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