

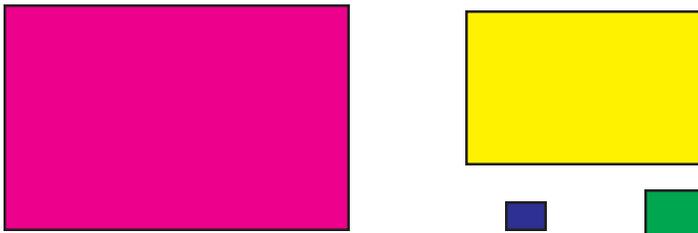
# MadisonPhotoPlus the Photo Summit e-Photo Newsletter

JUNE, 2007

## 12.2 Megapixels Wow!?!

Last month, Casio and Panasonic announced new cameras with 12.2 megapixel sensors. On the surface this sounds like great news; looking a little deeper perhaps not. As we've learned before, more pixels does not guaranty better pictures.

Compact cameras use compact sensors because there isn't room to fit a larger one (duh!) and smaller sensors cost less than larger ones. Smaller, however, is not always better. The following chart shows popular size sensors in use in digital cameras today.



- = 24x36mm (35mm full frame)
- = 16.7x25mm (APS - C format)
- = 5.3x7x2mm ("1/1.8 inch")
- = 4x5.3mm ("1/2.7 inch")

The full fame 35mm sensor is used in a few higher end SLR cameras. The "APS - C" sensor is used in the rest of the digital SLR cameras. The smaller sensors are used in the smaller cameras.

As sensors get smaller, they become more susceptible to "noise" Vincent Bockaert offers the following definition of sensor noise on the website <http://www.dpreview.com>:

Each pixel in a camera sensor contains one or more light sensitive photodiodes which convert the incoming light (photons) into an electrical signal which is processed into the color value of the pixel in the final image. If the same pixel would be

exposed several times by the same amount of light, the resulting color values would not be identical but have small statistical variations, called "noise". Even without incoming light, the electrical activity of the sensor itself will generate some signal, the equivalent of the background hiss of audio equipment which is switched on without playing any music. This additional signal is "noisy" because it varies per pixel (and over time) and increases with the temperature, and will add to the overall image noise. It is called the "noise floor". The output of a pixel has to be larger than the noise floor in order to be significant (i.e. to be distinguishable from noise).

If two sensors of the same size have different quantities of pixels (7 vs. 10 megapixels, for example) the sensor with more pixels is said to be noisier. Noise in digital images resemble what we called 'graininess' in film or specks of false color. The photos below demonstrate varying noise levels:



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In addition to the number of pixels crammed onto a sensor, the ISO sensitivity decreases the signal to noise ratio. The higher the ISO setting of the camera, the more noise will be in the photo. Some cameras have built in software to counteract this noise (creatively called noise reduction software), but this never looks as good as a noise free original shot.

It remains to be seen if these new 12.2 megapixel cameras will yield pictures better than, or even equal to, their 7 megapixel predecessors.

## **What Next?**

Let's say we now have a larger sensor in a larger camera. You know what we have? Larger pixels with stronger signal strength to have lower noise. These larger pixels generate more and clearer information and therefore clearer, cleaner, sharper photos with better color.

In fact, all 6 megapixel SLR cameras yield better photos than 10 megapixel compact cameras because they exhibit less noise because they have larger sensors. In addition, they have no shutter lag and are actually much easier to use.

Now we just have to wait for tiny SLR cameras with huge image sensors that we can put into a shirt pocket. Don't hold your breath.

## **Congratulations Aaron**

Last month Aaron passed his CPC exam and became our newest Internationally Certified Photographic Consultant. We are proud to have seven full time staff members who know so much about taking and making pictures and are so willing to share this knowledge with you.

Aaron is also reconstructing our web sites. Please visit them and tell us what you think.

## **B.I.P.S.**

### **(Better Imaging Photo School)**

Our evening classes are continuing through the summer. Some of the classes are already sold out, so make your reservations now for the classes you are especially are interested in. Reservations can be cancelled with full refunds up to 48 hours before the class if you can't make it. We also have gift certificates for "the class of your choice" available (an outstanding Fathers' Day gift possibility). A complete schedule is attached.



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## How We Rate Our Cameras

A leading consumer product and service testing magazine recently published their updated digital photography evaluations. Their ratings sometimes don't match up with our experiences and we offer the following guidelines we use in evaluating the products we recommend.

- Is the product at least very good quality?
- Is the product from a reputable manufacturer / supplier?
- Is the product of consistent quality?
- Does the maker offer AND HONOR its warranties?
- Do products from this manufacturer have a track record of holding up to the treatment of our clientele?
- Does the product offer a better than good quality to value ratio?
- Would I give this product to my mother in law as a gift?
- Can our typical customer use this product, or is an advanced engineering degree required? Once instructed, do they keep coming back for help, or do they remember how it works?
- Does the product's maker have a good record for maintaining a parts inventory for their discontinued products?
- Is the company approachable to solve a particular consumer's problem when it arises?
- How happy have our customers been with other products from this maker?
- How satisfied, pleased or ecstatic are our customers with this product.?
- Does the product work as it is advertised to?
- Are common accessories, like batteries, memory, filters, etc. affordable and easy to get?
- Will we regret having sold this product?
- and most importantly, is the client taking more and better photos than with their previous camera(s)?

These and other considerations are important to us because they are important to you. We never want to be associated with a product that fails or delivers second rate results. Neither do you. If a customer has a headache with any item we sell, it becomes our headache, and we don't like headaches.

Unlike the consumer publications, if we recommend something and you don't like it, we refund your money (the magazines or manufacturers never do).

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That's it for another newsletter... keep taking photos and have fun doing it!

## Madison PhotoPlus

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