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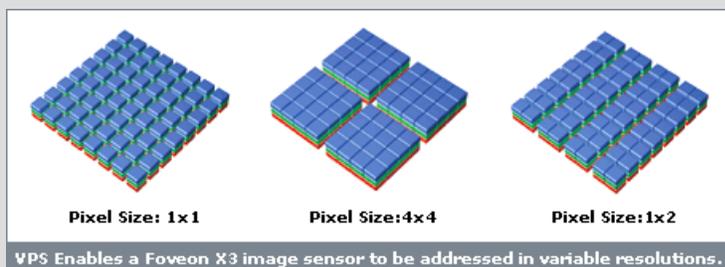
X3 TECHNOLOGY

VPS

Foveon X3® direct image sensors not only lead to better pictures, but better cameras too, as a result of their powerful full-color variable pixel size (VPS) capability. VPS opens the door to an entirely new breed of camera, one that can switch seamlessly between still photography and digital video, without sacrificing the quality of either.

The VPS capability allows signals from adjacent pixels to be combined into groups and read as one larger pixel. For example, a 2300 x 1500 image sensor contains more than 3.4 million pixel locations. But if the VPS capability were used to group those pixel locations into 4x4 blocks, the image sensor would appear to have 575 x 375 pixel locations, each of them 16 times larger than the originals. The size and configuration of a pixel group are variable—2x2, 4x4, 1x2, etc.—and are controlled through sophisticated circuitry integrated into Foveon X3 direct image sensors.

Because Foveon X3 image sensors capture full color at every pixel location, pixels that are grouped together form full-color "super pixels." No other image sensor can do this.



[Click here for an interactive demonstration of VPS](#)

The grouping of pixel locations increases the signal-to-noise ratio, allowing the camera to take full-color pictures in low-light conditions with reduced noise. Using the VPS capability to increase pixel size and reduce the resolution also allows the image sensor to run at higher frame rates, accelerating the speed at which images can be captured.

This makes it possible to shoot high-quality digital video, enabling the development of the first cameras with true dual-mode functionality. Without Foveon X3 technology, cameras attempting to accommodate both still and video functions must sacrifice performance in one mode to do the other well. And since the sizing of pixels can be done in an instant, a Foveon X3 direct image sensor can capture a high-resolution still photo in the midst of recording video—yet another first in digital photography.

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