



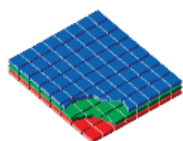
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X3 TECHNOLOGY WHY X3 IS BETTER

To capture the color that other image sensors miss, Foveon X3® direct image sensors use three layers of pixels embedded in silicon. The layers are positioned to take advantage of the fact that silicon absorbs different wavelengths of light to different depths. The bottom layer records red, the middle layer records green, and the top layer records blue. Each stack of pixels directly records all of the light at each point in the image.

Foveon X3® Capture



A Foveon X3 direct image sensor features three separate layers of pixel sensors embedded in silicon.

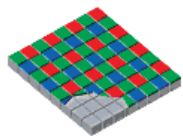


Since silicon absorbs different wavelengths of light at different depths, each layer records a different color. Because the layers are stacked together, all three colors are captured.

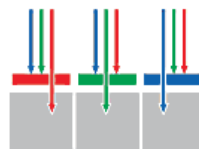


As a result, only Foveon X3 direct image sensors capture red, green, and blue light at every pixel location.

Mosaic Capture



In conventional systems, color filters are applied to a single layer of pixel sensors in a tiled mosaic pattern.



The filters let only one wavelength of light—red, green, or blue—pass through to any given pixel location, allowing it to record only one color.



As a result, mosaic sensors capture only 25% of the red and blue light, and just 50% of the green.

[Click here for an Interactive Tutorial](#)

Until now, all other image sensors have featured just one layer of pixels, capturing just one color per point the image. To capture color, the pixel sensors in CCD and CMOS image sensors are organized in a grid, or mosaic, resembling a three-color checkerboard. Each pixel is covered with a filter and records just one color—red, green, or blue.

That approach has inherent drawbacks, no matter how many pixels a mosaic-based image sensor might contain. Since mosaic-based image sensors capture only one-third of the color, complex processing is required to interpolate the color they miss. Interpolation leads to color artifacts and a loss of image detail. Blur filters must then be used to reduce color artifacts. The use of blur filters adversely affects sharpness and resolution of the final image captured.

With its revolutionary process for capturing light, Foveon X3 technology never needs to compromise on quality, so you get sharper pictures, truer colors, and fewer artifacts. And cameras equipped with Foveon X3 technology do not have to rely on processing power to fill in missing colors, reducing hardware requirements, simplifying designs and minimizing lag time between one shot and the next.

Dollar for dollar, pixel for pixel, nothing compares to Foveon X3 technology.

