

Modified for ultraviolet and infrared spectrum capture, a FinePix S3 Pro can let you be creative in ways the competition can't.

BY JOE FARACE

Infrared for all

FUJIFILM FINEPIX S3 PRO UVIR



The Fujifilm FinePix S3 Pro UVIR is one of the few cameras that comes with a warning label—a big yellow one with bold letters: “Ultraviolet light sources can cause eye and skin damage. Use protective eyewear and clothing [sic].” But I wasn't seeking an audition for *CSI: Des Moines* or *Reno 911*, I just wanted to test the aesthetic capability of this modified digital camera.

The FinePix S3 Pro UVIR digital SLR is

designed around a Nikon 35mm film camera body. The first production DSLR capable of photographing the ultraviolet (UV) and infrared (IR) light spectrums, it's intended for use in science, medicine and fine art.

Criminologists, for example, use ultraviolet and infrared photography to uncover evidence invisible to the human eye, such as gun shot residue and bloodstains, and to recover

altered, burned or obliterated writing. IR photography is also used in nighttime surveillance. That's one reason the FinePix S3 Pro UVIR has a live CCD previewing feature that enables manual focusing with dark filters attached to the lens, but the camera's also useful for fine art capture.

The camera has all the good stuff you expect from a stock S3 Pro, including Fujifilm's Super CCD SR II image sensor, which simultaneously captures 6.17 million S-pixels and 6.17 million R-pixels. This technology yields a greater dynamic range than single-pixel sensors for both IR and conventional capture, which contributed to the crisp capture and fine detail in all my test shots.

For IR/UV capture Fujifilm recommends the following Peca filters: 900/18A—UV; 904/87—IR, no visible light; 908/87B—basic IR, some visible light; 916/cut filter—sees only visible light, cuts IR and UV. Fujifilm offered me two selections for my tests, and I chose the Peca 904 and 908, in addition to my own IR filters. Peca Scientific IR filters cost \$89.95 to \$175, depending on the size (www.pecascientific.com). In my preliminary tests, the Peca 904 consistently produced the best results.

JPEG or RAW capture—I tried both with the S3 Pro UVIR. First, I captured JPEG files using four different manufacturer's filters, plus a reference shot in color. For

specs: FujiFilm FinePix S3 Pro UVIR

SENSOR: 23.0x15.5mm Super CCD SR II

RESOLUTION: 12.34 megapixels (S-pixel: 6.17million, R-pixel: 6.17million) (4,256x2,848 pixels)

FOCUS: TTL phase detection. Auto AF may not perform well with S3 Pro UVIR. Manual focus is recommended in IR applications

METERING: TTL full-aperture exposure metering system

WHITE BALANCE: Automatic, Fine, Shade, Fluorescent light (Daylight), Fluorescent light (warm white), Fluorescent light (cool white), Incandescent light, Custom1, Custom2. WB is not applicable for IR

SHUTTER SPEED: 1/4,000 second to 30 seconds, bulb

SHOOTING SPEED: Maximum 2.5 frames per second

ISO: 200 to 1600 (Although ISO setting below 200 is possible, it's not recommended)

LENSES: Nikon F mount (with AF coupling, AF contacts), D/G type AF Nikkor lenses with all functions; AF Nikkor other than D/G type with all function except 3D Matrix metering; Non-CPU lenses usable in Manual exposure mode but exposure meter will not be accurate w/S3 Pro UVIR

STORAGE: xD-Picture Card and CompactFlash

FILE FORMATS: JPEG, RAW (14 bits)

SYNC: X-contact only; flash synchronization up to 1/180 second

PRICE: \$1,799.95



B+W 092 Infrared filter: I love the tonal rendition. This dark red filter blocks visible light below about 650nm. The filter factor is about 20-40 (not a typo), which is why I made all filtered shots in manual mode. Exposure 1/90 second at f/11, ISO 400.



Canon EOS Rebel XT*i* converted to IR-only capture: This image could easily have been made handheld, the way I usually use the camera. Exposure 1/80 second at f/16, ISO 400 with +2/f-stop exposure compensation.



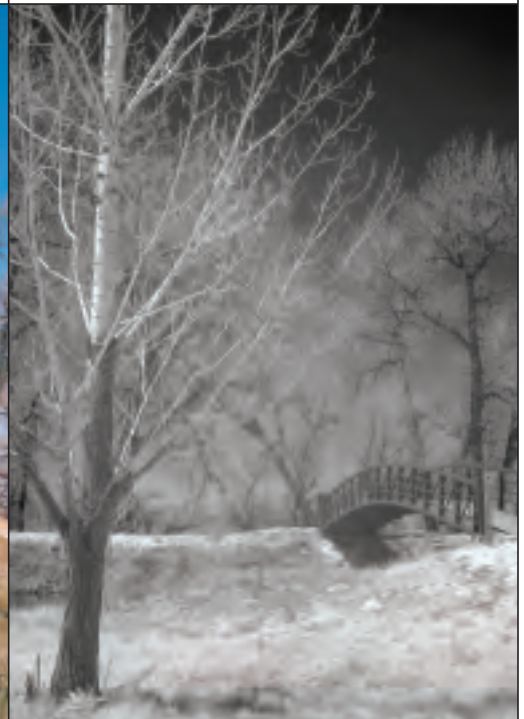
Cokin Infrared 007 (89B) filter: Clearly the best bargain in IR filters. Series A costs just \$37.75 and provides 50 percent transmission at 720nm. Be sure to hold the filter flush to the lens with your fingers. Cokin modular holders risk light pollution from the open space on the sides. Exposure 1/90 second at f/11, ISO 400.



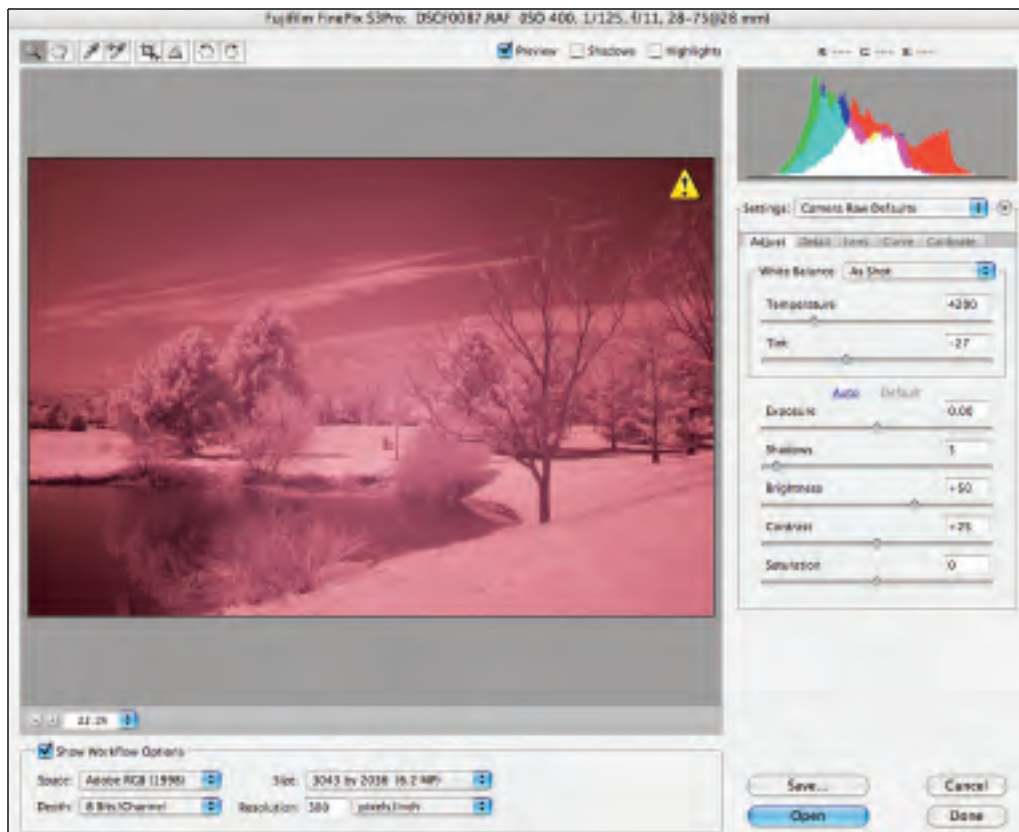
Peca 904-1 filter: Hand-holdable, yes, but you can't see anything through the viewfinder. Exposure 1/60 second at f/11, ISO 400.



Fujifilm FinePix S3 Pro UVIR reference color image: Because of the lack of IR filtration on the imaging chip, a straight color shot with the S3 Pro UVIR contains lots of IR contamination, which I cleaned up here to give you an idea of how the scene actually looked. Exposure 1/500 second at f /11, ISO 400.



Singh-Ray I-Ray Infrared Filter: This filter transmits over 90 percent of the near-infrared light between 700- and 1100nms, while blocking virtually all visible and UV light. Exposure 1/90 second at f/11, ISO 400.



Fujifilm FinePix S3 Pro UVIR RAW file: This image has been opened in Adobe Camera Raw and all color removed using the Saturation slider.

comparison, I also shot with a Canon Digital Rebel XTi that had been converted for IR-only capture and required no filter.

All of the test shots were made with the camera mounted on a Manfrotto tripod so the composition would be identical in all captures. You'll see differences in the exposure of the captures based on the density of the specific filter in use. Unlike many DSLRs, the S3 Pro UVIR supports real cable release; for me, the best traditional release is the Nikon AR-3, priced about \$15.

IR shots have to be processed before use. I used the same processing steps with all the IR JPEG files, which included applying the Adobe Photoshop Desaturate mode for conversion to monochrome and the Levels commands. There are many ways to accomplish the task, so for consistency, I

chose the simplest method.

For the second test, I shot in RAW in format. I was surprised that the 2GB CompactFlash card could store only 79 RAW image files, which end up around 25MB each. I sought out an area with deciduous and evergreen trees to be sure to get that white foliage so beloved of digital IR shooters. I processed all the RAW files from the S3 and the reference shots from the EOS Rebel XTi in Adobe Camera Raw and applied the same techniques. Some of the RAW files—some JPEGs too—could have been improved, but I wanted to make the comparisons as direct as possible.

I liked working with the Tamron SP AF28-75mm f/2.8 XR Di lens that Fujifilm provided, but because of the S3 Pro's 1.5X magnification ratio, I would have preferred a wider angle of view. The Tamron AF18-

200mm f/3.5-6.3 XR Di II lens has a more flexible focal length and would do well, although wider is better for IR landscapes.

No matter which filter I used, all of the IR images were spectacular. I confess to a slight bias for those made with the Peca and Singh-Ray filters, because they had a broad range of gray tones and a clearly wider infrared spectrum.

All of the color photographs are lightly polluted by the magenta/red tones inherent with infrared reflectivity, because this camera lacks an IR sensor filter to block this light. Correcting in Adobe Camera Raw is simple with white balance adjustments (click the Eyedropper on a neutral tone to take care of most of it), and it's no biggie to fix JPEGs in Photoshop or another imaging program like PictoColor iCorrect EditLab Pro.

If you're a Nikon or Fujifilm shooter who wants to fool around with digital IR, buy a used Nikon D70 or D100 (about \$400) and have it converted to IR-only (\$250 at www.lifepixel.com). You won't have to buy expensive IR filters.

For wedding photographers who want to include monochrome IR images in every package, consider buying the Fujifilm FinePix S3 Pro UVIR. It's ready to use out of the box and can capture color images as well.

I was prepared to be unimpressed with the FinePix S3 Pro UVIR. It's got a tiny LCD screen and clunky ergonomics, but when it comes down to what a camera's supposed to do—capture images—the S3 Pro UVIR is hard to beat for stunning infrared capture. ■

Visit the Web Exclusives at www.ppmag.com to see the RAW file test results.

Joe Farace is the author of "The Complete Guide to Infrared Photography" (Lark Books, \$24.95). For aesthetic applications of digital infrared photography, read "Digital Infrared Travel Photography" in the April archives of Web Exclusives at www.ppmag.com.