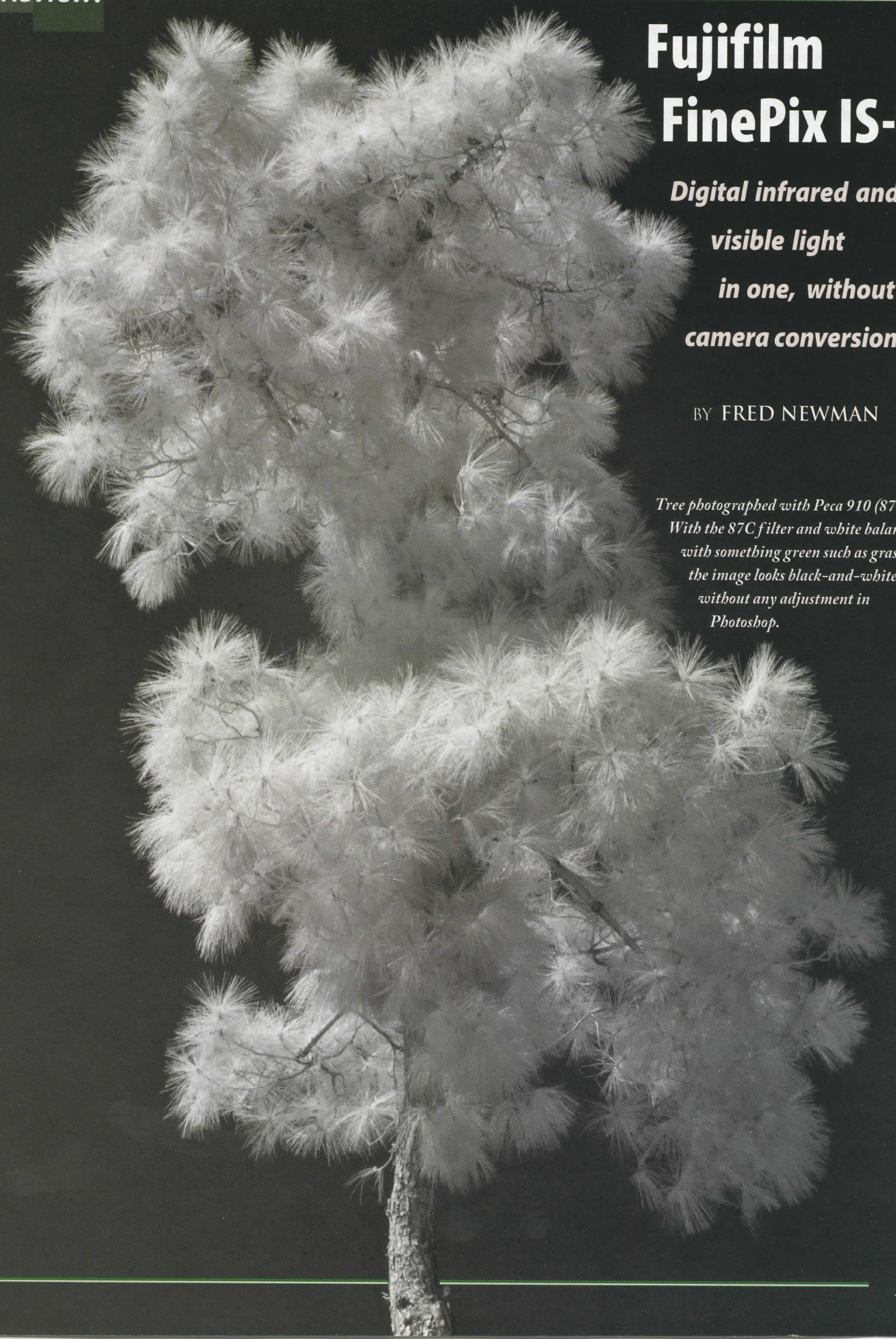
Fujifilm FinePix IS-1

Digital infrared and visible light in one, without camera conversion

BY FRED NEWMAN



Tree photographed with Peca 910 (87C). With the 87C filter and white balancing with something green such as grass, the image looks black-and-white without any adjustment in Photoshop.

Infrared photography has always fascinated photographers, and digital cameras have made it more user-friendly than it was with film. And a good thing too, as infrared film is getting hard to find: Kodak has discontinued both their color and black-and-white infrared film.

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You may not have heard of the two cameras that Fuji manufactures that are sensitive to ultraviolet, visible, and infrared light. They originally were aimed at the law-enforcement and scientific markets. Law-enforcement agencies were concerned about the availability of infrared film in the future, so they asked Fuji to make a digital camera that was sensitive to infrared. Fuji has always been a niche-market camera manufacturer, and took up the challenge.

Now fine-art photographers are starting to take notice of these cameras: the Fujifilm FinePix IS Pro, and the Fujifilm FinePix IS-1. The IS Pro is based on Fuji's S5, while the IS-1 is based on the S9100. The main visible difference between the S9100 and the IS-1 is that the pop-up flash shell is green on the IS-1 and black on the S9100.

I recently got an IS-1, and found it a very practical choice for infrared: a 9-megapixel camera that sells for less than $900 at select dealers. (Fuji lists these dealers on its Web site at www.fujifilmusa.com.) The one complication is that you have to register your camera before you buy it, and if you sell it, the buyer has to register it. Yes, this is a pain, but if the camera were used to, say, photograph celebrities in infrared light in embarrassing situations, there could be major law suits.

Infrared and digital cameras

All digital photosensors are sensitive to light from the ultraviolet through the visible and into the infrared. Nearly all digital cameras have a specific infrared-blocking filter (hot mirror) above their sensor, which eliminates most infrared light. Both Fuji cameras lack this filter. (You instead place a filter in front of the lens.) There are a few companies that can convert your digital camera to infrared by removing the infrared-blocking filter and replacing it with an infrared filter such as the Wratten 89B or the Wratten 87C. However, you void the manufacturers warranty when you have a company other than the manufacturer do this infrared conversion.

The IS-1 is an ELV (electronic view finder) camera. Based on the S9100 it has some really terrific features and feels like an SLR. The lens is 28–300mm (10.7× optical zoom) equivalent. It feels like a zoom lens on an SLR and is quite smooth when turning the zoom ring, not like the typical EVF camera where you push buttons to search for the focal length you want. The IS-1 even has a thread on the shutter for a cable release, a PC sync, hot shoe, and more. It has a compact flash slot in addition to the xd-card. (I only used compact flash cards, so I find this very useful.)

One of my favorite things about this camera is that I can actually see the entire image in the viewfinder with my glasses on. With cameras converted to infrared, the hot filter is replaced with a filter like the 89B infrared filter and the camera only sees in IR. With the IS-1 you can photograph without a filter and see normally visible light, or put a filter in front of the lens and see infrared or ultraviolet. My test camera came with a whole set of filters, more than I needed. I mainly used the Peca 916 IR-cutoff filter (normal daylight—cutting off the ultraviolet and infrared), the 89B (Peca 914), and the 87C (Peca 910). Fuji hooked up with Peca to make a nine-filter set (called the Peca Forensic Filter Kit) for their infrared cameras. All the filters in the kit are 67mm, and it comes with a few step-up rings so that it can be used on the IS Pro and IS-1. There is a 58mm to 67mm step-up ring for use on the IS-1. Information on these filters is found on the Peca Web site (www.ir-uv.com).

In addition to the camera manual, which comes on a CD, the camera comes with five pages of information that explains that it has been modified for use in visible and infrared light, and suggests that the auto focus and program settings may not always work for infrared photography. It states that the S9100 auto focus is designed to focus with green light and when photographing in infrared to manually focus the camera. It includes a few examples of photographs taken with several of the filters, as well as a list of the filters included in the Forensic filter kit and the equivalent filters made by B+W and Hoya. I suggest reading this before using the camera.

I found the camera's controls quite friendly—but then, I did read the parts of the manual I needed to know. The left side of the camera includes an information-check button. Press it once and it displays the histogram, press it again and it displays the current settings for saturation, contrast, white balance, sharpness, and flash-brightness adjustment. Below that is the focus mode selector switch that offers autofocus (continuous and single) and manual focus. When in manual focus, you can push the focus-control button on the back of the camera: the central portion of the image is then enlarged 10×, making it easy to manually focus the camera with the focus ring. Quite a nice feature for checking your focus in infrared.

The white-balance setting is on the first screen when you press the menu button. It actually offers two white-balance settings: one for daylight and one for infrared. Interestingly, for daylight you use a white card for white balance while for infrared something

Grandson Jeremy photographed with Peca 916 (IR & UV blocking filter for visible light). Note with this filter the IS-1 becomes a regular camera.

Grandson Jeremy photographed without any filter. Note color change due to IR and UV light in addition to visible light.

green (such as grass) is used. A main advantage of the IS-1 is that you can photograph in visible light, ultraviolet, or varying degrees of infrared. This is all done with filters in front of the lens. You can buy the camera by itself, with a daylight filter and an infrared filter, or with the whole set of nine filters. These are on the www.ir-uv.com web site. Fuji has hooked up with Peca for filter sets. You can use a B+W 403 to photograph in UV, a B+W 486 for the visible spectrum and for infrared the B+W 092 & 093 or the Hoya R72. These filters can be purchased separately.

Our eyes are sensitive to visible light (400 to 700 nanometers), while infrared light is from 700 to 1200 nanometers. This is where infrared photography becomes interesting. A filter such as the B+W 093 cuts off most of the visible light, so photographs look black and white. More visible light is present using filters such as the B+W 092 and the Hoya R72, so you get the false-color infrared look. The B+W 403 is for ultraviolet photography.

I have to admit the IS-1 makes IR photography fun. In use the IS-1 has the feel of an SLR, and I quickly got used to using the white balance (looking for something green) when using the different IR filters. I found that I used the viewfinder almost all the time for photographing or changing settings. About half the photographs I took were handheld. The IS-1 uses four AA batteries. I used rechargeable batteries, and since I mainly used the electronic view finder, I rarely ran out of power. For landscapes, I recommend a tripod and using manual focus because there may not be enough green light for proper auto focus.

Conclusions

With a B+W 486 filter in front of the lens, this camera takes terrific pictures in visible light: family, sports, studio portraits with flash sync, close ups, landscapes, and everything else you do with an electronic viewfinder camera. Using infrared filters, the IS-1 is a terrific infrared camera. All this comes in a small package. Wedding and portrait photographers might want to look at the IS-1 if they want to take infrared photographs for their clients.

On the downside, you have to register your camera before you buy it, it's not an SLR and it has a smaller sensor (1/1.6-inch). You also have to register the camera and if you sell the camera the buyer has to register the camera. Fuji does make the IS Pro camera, which has a 30-second live preview and makes it more convenient to shoot camera Raw, but it is more expensive than the Fuji IS-1 ($2,500 for the body).

I think the pluses outweigh the minuses. If you are thinking about doing infrared photography, the Fuji IS-1 is a great camera. I really enjoyed using it and it was always interesting to see the results. The main advantage to a camera like the IS-1 is the ability to change filters, so you can photograph in UV (18A filter), UV through IR (no filter), false color IR (89B filter) and black-and-white IR (87C filter). ■

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